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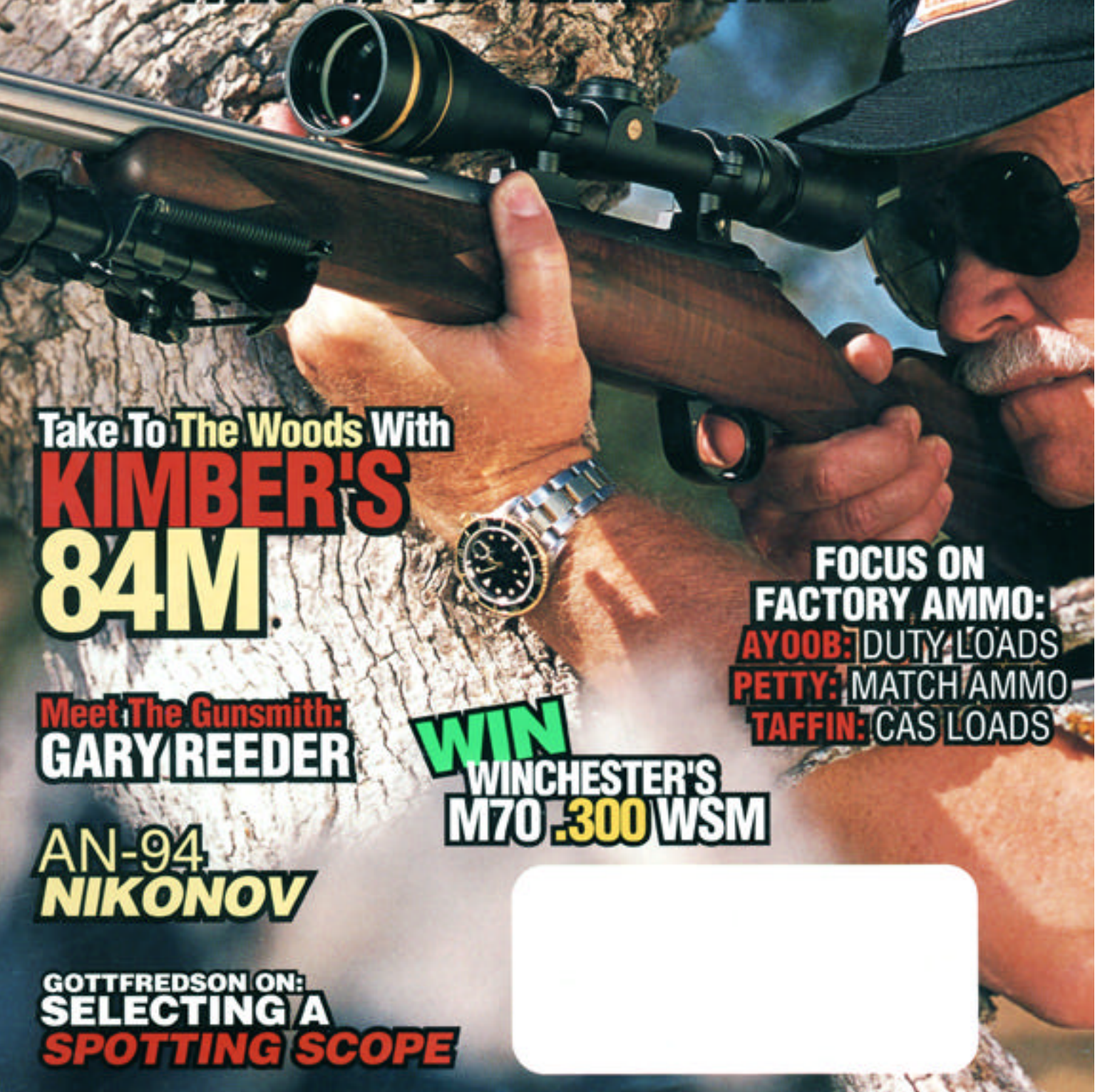
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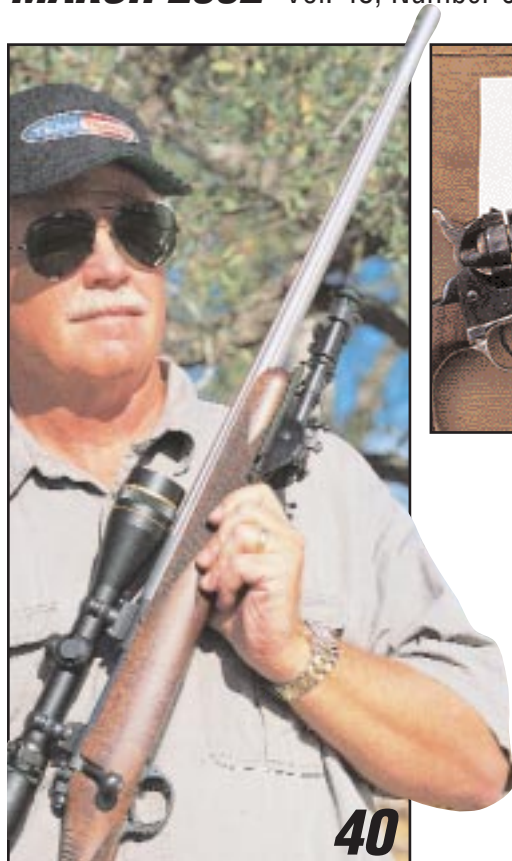
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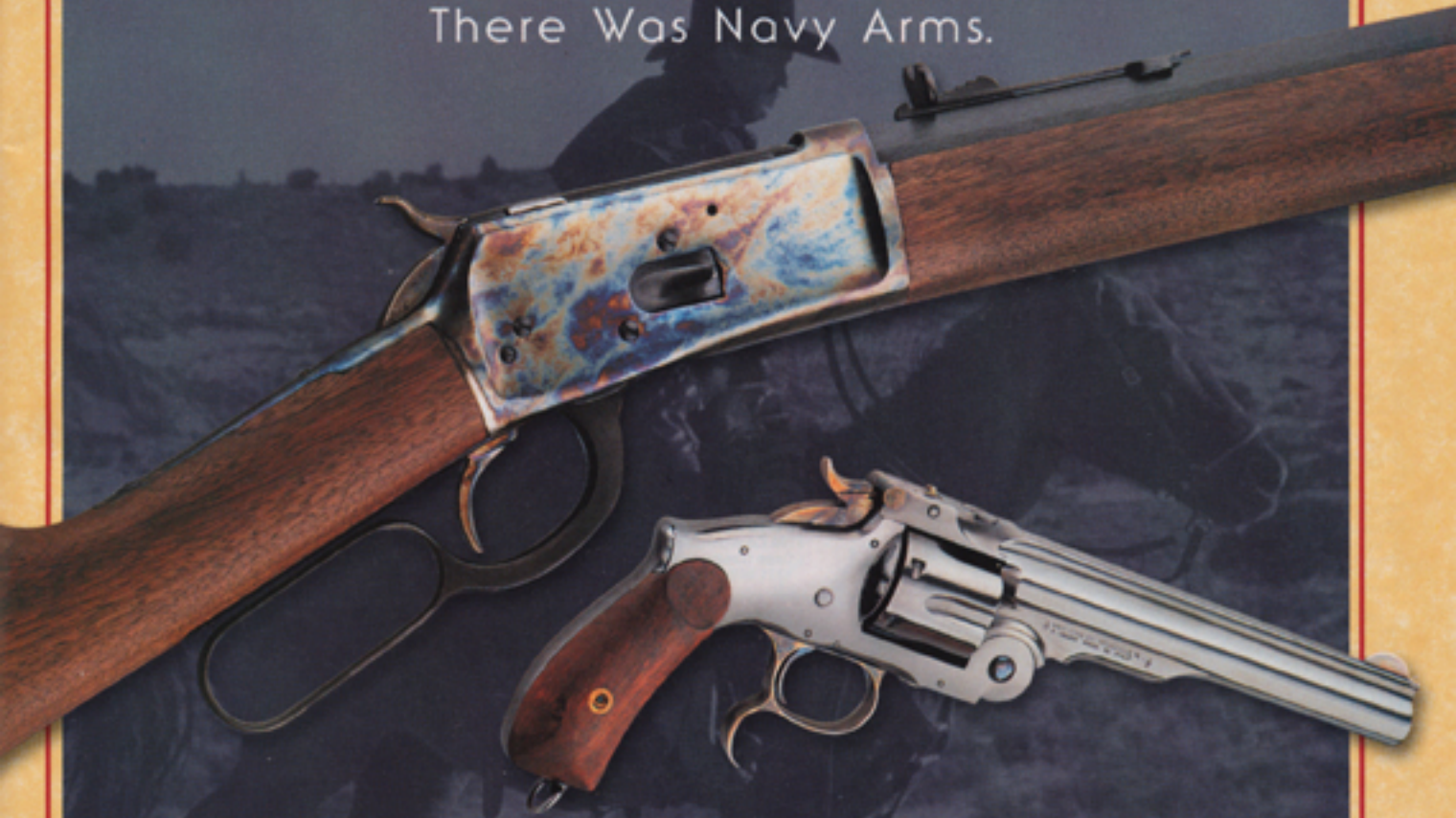
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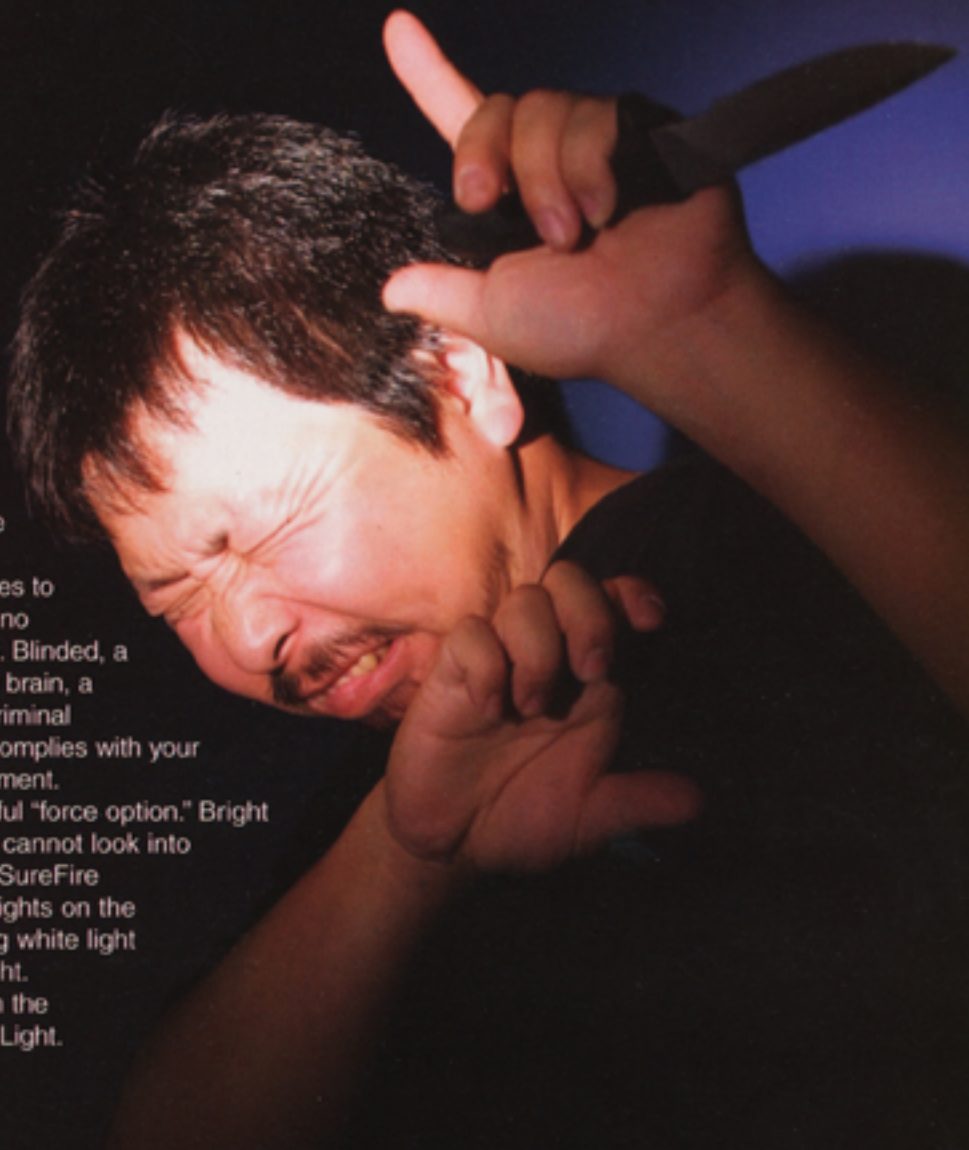


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### LETTER OF THE MONTH



GUNS MAGAZINE JANUARY 2002

### Safety Is The Key

Your January 2002 issue is without a doubt the finest, as a whole, gun magazine I have ever read, and this has been over 65 years.

*The Greatest Responsibility and Loaded, Ready, Safe* are the kind of articles that should have been written years ago.

Many thanks,  
Thomas Blakemore  
Atlanta, Ga.

*We greatly appreciate the kind words, although it would be very difficult to say that January's issue is the absolute "best." Remember, GUNS Magazine has been going on strong now for nearly 50 years! Only time will tell.*

*We are continually striving to improve GUNS Magazine and are always interested in hearing from our readers about the directions you would like to see us take.*

Thanks again,  
Editor

### Unique Information

I use Unique powder in both handgun and shotshell, and I'm always looking for more information about the powder. And, for a long time, I've been curious about how gun barrels are actually manufactured.

I was delighted then to discover that *both* subjects had been covered in the December issue of *GUNS Magazine*!

Nice work!  
Peter Wank  
Westport, Conn.

### Service With A Smile

I was recently doing some reloading on my trusty Lee turret press, when the swivel adapter for my auto disk powder measure broke. I sent an e-mail to Lee precision stating such and that I had reloaded many thousands of rounds with it and inquired as to whether there was a part that I could purchase or did I need to replace the whole swivel attachment.

I got a reply stating that it was a very uncommon occurrence (to the point that this had never happened before to their knowledge) and that they were sending me a replacement at no charge to me. I personally believe that when a company delivers this kind of service (for equipment that is several years old and well used), it deserves repeat business. I assure you they will continue to get mine.

William Carmickle  
Via E-mail

### Trial By Fire

Thanks for the article on the .30 Carbine Blackhawk. I'd guess it is probably less used by its owners than any other Blackhawk caliber because of the noise and flame. I found it to be much more fun to target shoot the Blackhawk .30 Carbine with light and mid-range loads. Try 3.0 grains of Bullseye with a 115-grain lead bullet. Pressures are light enough that small pistol primers can be used. Jacketed bullets and 6.0 grains of AA#7 also work well — use rifle primers just to be safe.

I think there are probably a lot of light and mid-range load possibilities that would make the gun more fun to shoot. Light loads also increase the case life. There are also some 125-grain spitzer point bullets which are short enough to fit in the Blackhawk cylinder — has anyone tried any loads with these?

J. Wexler  
Mar Vista, Calif.

### A Perfect 10

I enjoyed your article *Taffin's Top Ten*, which was published in the October issue of *GUNS Magazine*. Most appreciated were the sentiments which you expressed in the last paragraph.

I have taken my moose. It was a beauty! Its 65-inch rack adorns our living room wall. My wife has taken hers as well, and her moose rack hangs on another wall. We don't feel the need to kill another, though the meat is wonderful. Because the hunting experience is most important to me, I now hunt with a .454 Freedom Arms revolver. Though I would not turn down a double lung shot at a moose, I don't hunt them as actively as I once did. Taking a couple of Sitka Blacktail deer when circumstances permit a visit to Kodiak Island is just as satisfying.

Thanks for your interesting and well-written article.

Robert H. Parkerson  
Palmer, Ala.

### Mauser Misfires Mystery Solved!

I really enjoyed the article by Mike Cumpston on his Yugo Mauser. I would like to add that I had a number of misfires on a VZ-24 Mauser with "vintage" mil-surp ammo that turned out to be a sacked-out firing-pin spring. I think it probably stems from being in a "cocked" condition for a number of decades. I got a new one from Numrich ([gunpartscorp.com](http://gunpartscorp.com)) and haven't had a single misfire since. Now, if I could get some plans for a muzzle brake, I'd have the recoil problem under control! Great magazine.

Sincerely,  
Alan Mummert  
Via E-mail





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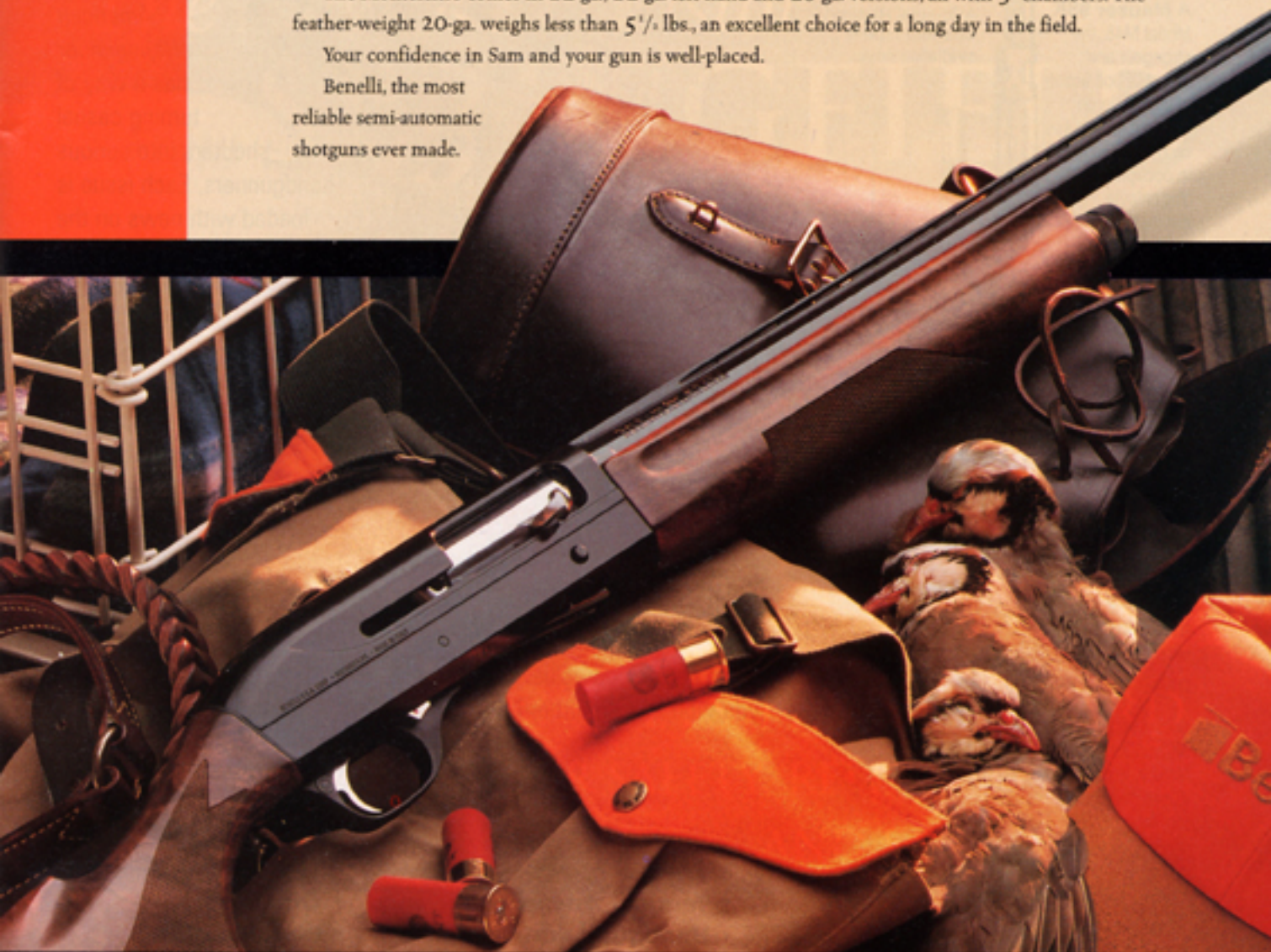
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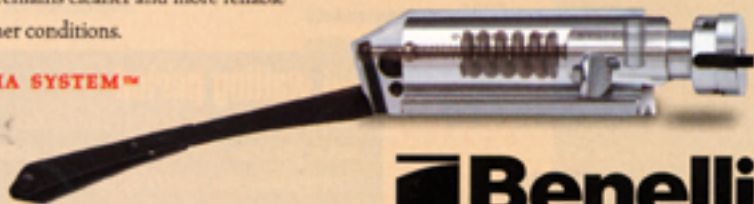
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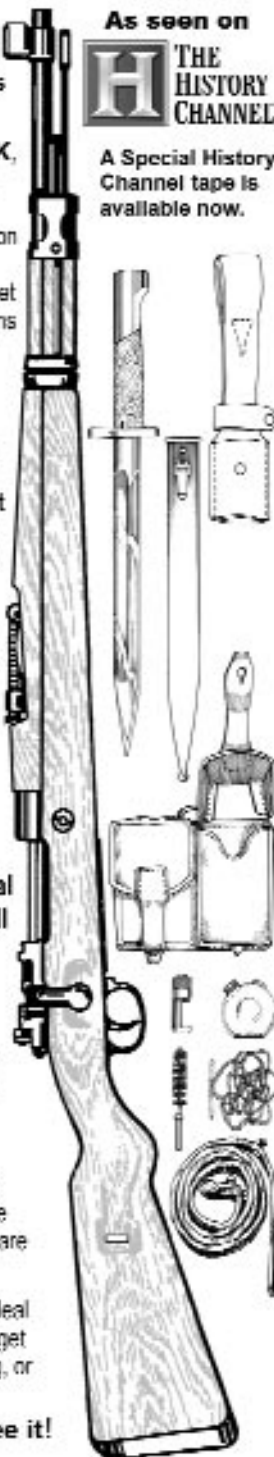
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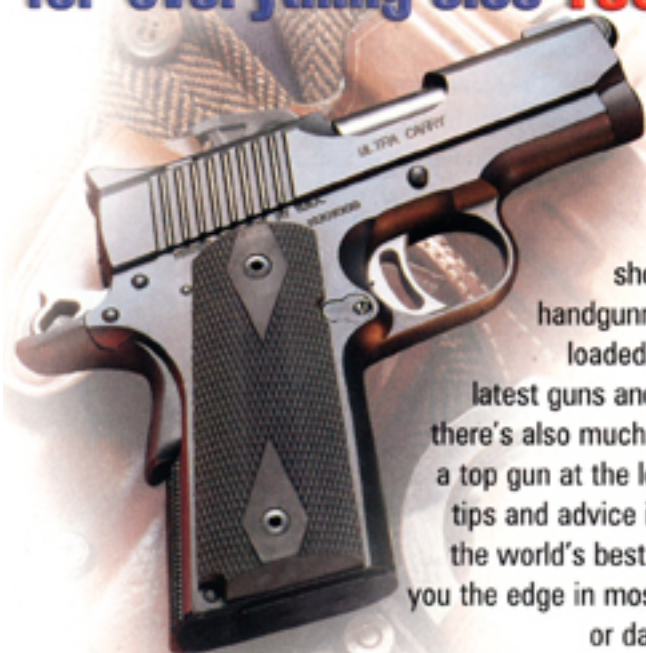
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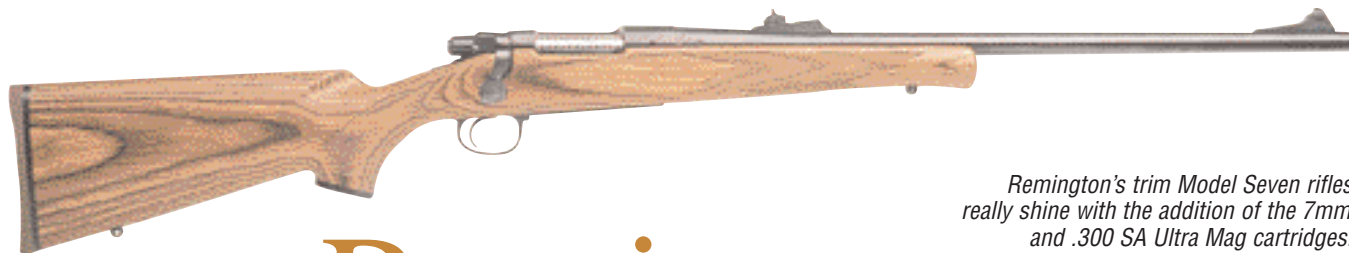
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# Remington Seminar 2002

## MORE GOOD THINGS TO COME FROM "BIG GREEN"

By Charles E. Petty

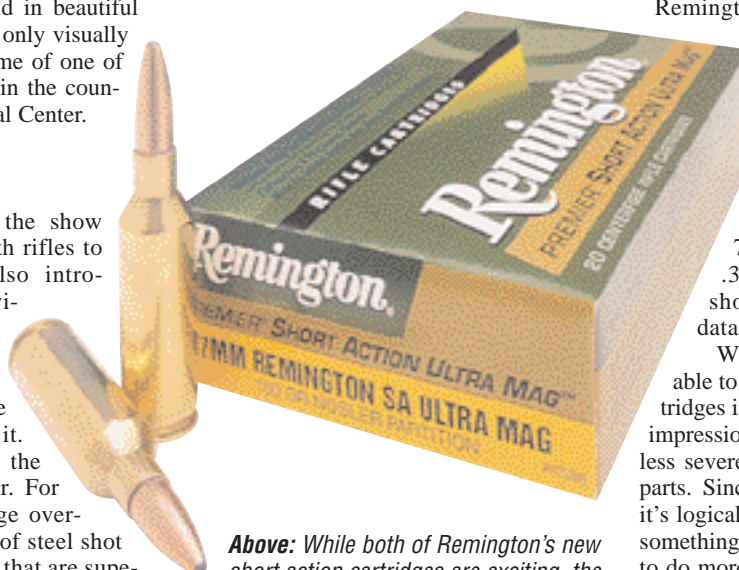
Each year, Remington gathers members of the firearms press to display its new products for the upcoming year. This year, the event was held in beautiful Cody, Wyoming. Cody is not only visually stunning, but it's also the home of one of the finest firearms museums in the country: The Buffalo Bill Historical Center.

### Hevi-Shot

This year, the stars of the show were two new cartridges with rifles to shoot them. Remington also introduced some stuff called Hevi-Shot (which is an alloy of tungsten, nickel and iron made by Environ-Metal Inc.), and Remington has the exclusive license to market it. This is really big news for the waterfowl and turkey hunter. For the waterfowler, the cartridge overcomes all the disadvantages of steel shot and actually delivers patterns that are superior to what we would expect with lead shot. In addition, Hevi-Shot pellets are 10-percent more dense than lead, so pellet energy is significantly greater. The turkey hunter will benefit with longer range and denser patterns. Using a special choke tube developed for Hevi-Shot, Remington reports 40-yard pattern densities of over 90 percent. That is unheard of.

### Short-Action Ultra Mag

The rifle ammo is of the *short* variety that is sweeping the land. Actually, I marvel that someone hasn't done this a long time ago. We've known for years that short, fat cases are highly efficient with .22 and 6mm cartridges, and



*Above: While both of Remington's new short action cartridges are exciting, the 7mm was particularly pleasant to shoot.*

*Below: Hevi-Shot — now exclusively from Remington — is nontoxic and actually performs better than lead shot.*

there's no reason to think they would be different for larger calibers. Remington will offer two such cartridges: 7mm Remington SA (short-action) Ultra Mag and .300 Remington SA Ultra Mag. How long do you think it will be before they are known as the SUM cartridges? The cases are based on the .300 Remington Ultra Mag, with the stated goal to duplicate the ballistics of the 7mm Remington Magnum and .300 Winchester Magnum in short-action rifles. Remington's data indicates that this is done.

While I was at the seminar, I was able to shoot both the .300 and 7mm cartridges in the Model Seven rifles. The first impression was that recoil seemed much less severe than from the full-size counterparts. Since they are burning less powder, it's logical that recoil would be less. This is something that can be verified when we get to do more testing. Formal accuracy testing wasn't possible, but my impressions from shooting at steel targets out to 500 meters was favorable. There will be a full report in a future issue and my suspicion is that you'll be hearing a lot about the cartridges.

### A Peach Of A Cartridge

Each year, Remington offers the *Classic Model 700*. These are limited-edition rifles with very traditional features. The variable each year is the caliber, and this year's offering is chambered for the .221 Fireball. I bet some of you have just said, "The *what?*" The cartridge was introduced in 1963 with the XP-100 bolt-action handgun. The XP-100 was discontinued in 1985, and the cartridge was dropped in 1998. While I'm sure someone did it on a custom basis, I don't

*continued on page 67*





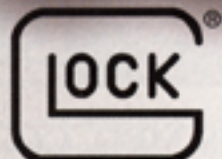
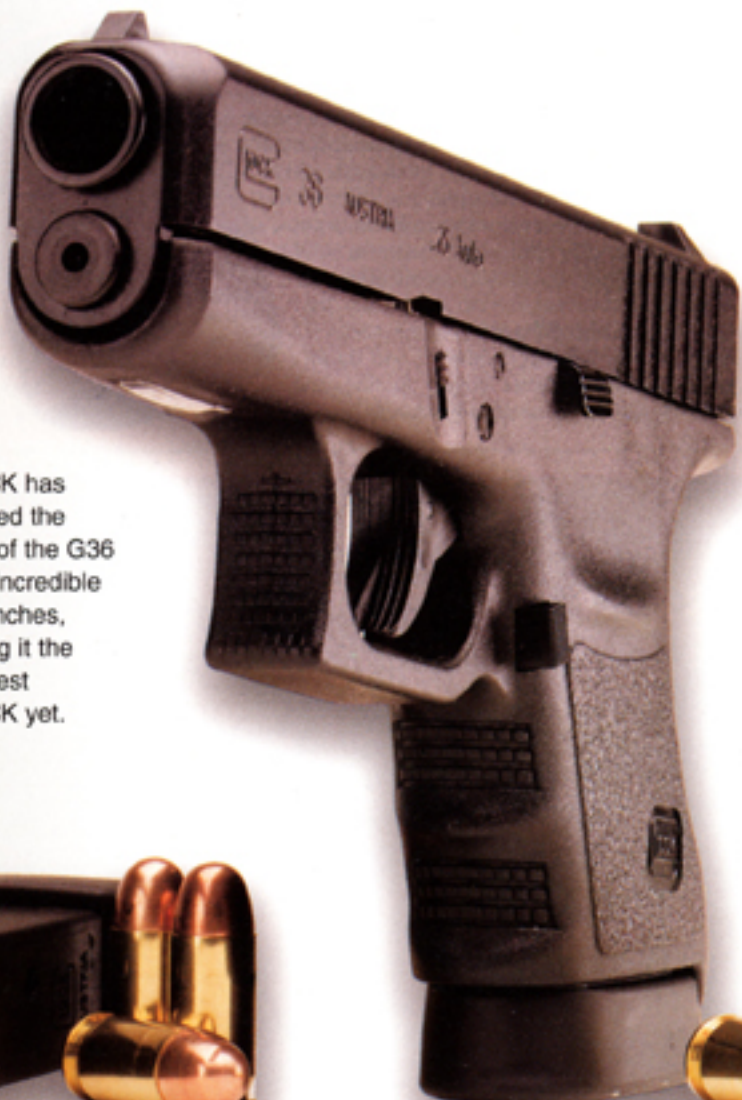
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## KG-2 Bore Restore

**K**G-2 Bore Restore is a cleaning material that you should know about. Although it has been on the market commercially for 3 years, I only recently began experimenting with it. It is not a solvent, but rather an extremely mild non-embedding abrasive cleaner. Now before you lift your eyebrows, you should know that specialized abrasive bore cleaners have been used for years by the benchrest-shooting crowd in very expensive match barrels. In fact, the original formula for KG-2 was developed specifically for use in best quality match-grade barrels. The reason for using this type of mild abrasive is actually very simple.

We have all heard that a new barrel should be carefully broken in by a long process of shooting one to five rounds, cleaning thoroughly, and then repeating this process many times. The reasoning behind this is that the bores of even the finest match barrels, no matter how smooth they appear, contain surface pores that need to be carefully filled with jacket material. Once this process has been properly completed, the "seasoned" barrel will be much more resistant to copper fouling, and frequently will shoot better as well. Having gone to all of this trouble, why would you want to use an aggressive chemical solvent that etches the jacket metal right back out of the pores of the steel?

KG-2 Bore Restore will not do this. It *will* do an excellent job of removing excess copper fouling, and with continued use will bring an already smooth bore to an



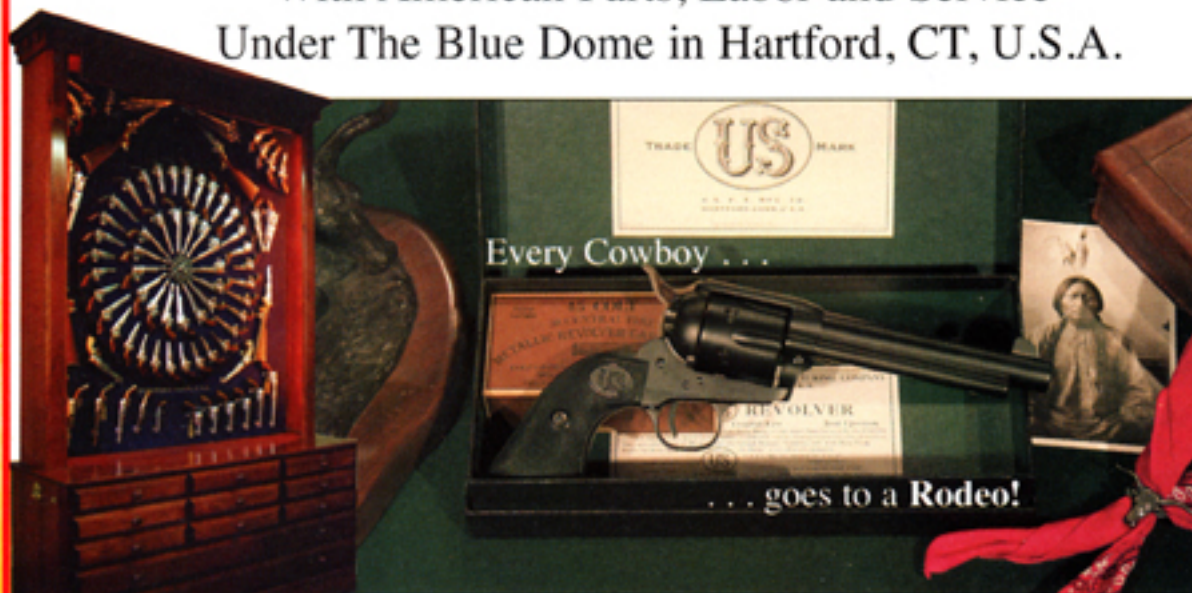
even higher state of polish. I have found that it does a good job on lead-fouled pistol barrels as well. KG-2 is a semi-thick liquid and is easy to apply to either a patch or a tight-fitting bore brush. I also used it on the badly neglected chamber of a surplus .303 Lee Enfield. Applying a modest amount to a tight-fitting bronze brush mounted on a short section of cleaning rod, I used a variable-speed drill to spin the brush in the chamber. In no time, the chamber looked as clean as the day it was first cut, and I found that feeding and extraction were much improved. I've tried a lot of cleaning materials that were supposed to be superior. Some were indeed very good, and some were not. The KG-2 definitely falls into the former category, and it will be staying on my workbench.

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## Rapine Bullet Moulds

Today, with the many commercial suppliers of cast bullets, it is a little bit uncommon to meet shooters who cast their own bullets. This was not the case when I started shooting, and if you wanted to shoot in any sort of quantity, it was necessary to learn how to pour your own. Even today, there are a good many reasons to take up the art of bullet casting. Yes, it can be hot hard work, but the ability to produce bullets that are just exactly what you want for a specific use — with the right weight, hardness, diameter, profile and lube capacity — can make a dramatic improvement in the quality of your handloads. It is also a very fulfilling experience to use your carefully cast and selected bullets to bring home game for the table or to win a tough shooting match.

I've used bullet moulds by a wide variety of manufacturers, but I only recently tried a Rapine mould. Rapine moulds have established an enviable reputation for quality, durability, and for the staggering variety of bullet designs that it offers. The blocks are machined out of 2024 T3 aluminum alloy, an extremely hard and durable material. The cavities are cut in the traditional way by the use of a "cherry." You won't need to remember to order a set of handles for a Rapine mould. Each mould comes complete and ready to use right out of the box.

The mould that I recently ordered is Rapine's No. 457500, a copy of the 500-grain 1884 government bullet for the .45-70 cartridge. I usually find that large, heavy bullets are particularly fussy to cast, but the Rapine mold performed perfectly just as soon as it came up to proper temperature. The mould did not overheat, as most moulds



will do in continuous casting, and to my delight, the bullets dropped free with no effort at all. This is a major time and frustration saver, and was especially surprising as this bullet features three deep, square-cornered lube grooves. The bullets dropped from the mould at .459-inch diameter when cast with a soft 20 to 1 alloy, exactly as they were supposed to. Added to this excellent performance is the fact that the aluminum mold cavities do not need to be greased after use as iron moulds do, and I must say that this may be the finest bullet mould I've ever used. If you cast your own bullets, or would like to, call or write for Rapine's catalog.

### Rapine Moulds

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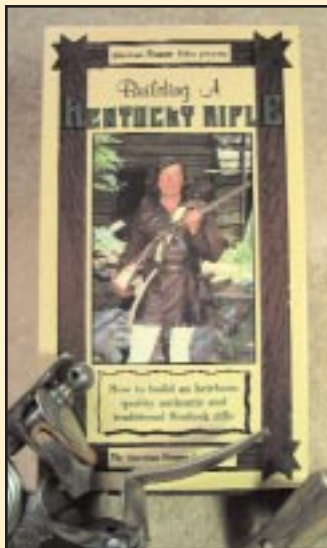
## American Pioneer Video

Like a lot of guys, I've occasionally been guilty of spending too much time in front of the television. Given the current state of broadcast TV, I soon tire of it; and so, when the easy chair beckons, I usually reach for a good video. I'm lucky to have a fair size pile of video cassettes. Many of them are favorite movies from the past, but I also have a number of great instructional videos. Of this latter category, my favorites are from American Pioneer Video.

A.P.V. is headed by Jim Wright, and the focus of the videos he offers is on the pioneer/colonial lifestyle, muzzle-loading rifles, and nearly lost skills such as blacksmithing. He offers a very

wide selection, but I particularly enjoy the videos featuring Hershel House.

Hershel House, of Woodbury, Kentucky, is one of the most respected and admired builders of period-correct muzzle-loading rifles in America. He is a master blacksmith and often hand forges the iron buttplates, trigger guards and other mountings for his favorite early-Virginia pattern rifles. Even when not working in iron, House generally hand-makes most of the components for the rifles he builds. His talent has been recognized even outside of the shooting community, and House has received a grant from the National Endowment for the Arts to take on an



apprentice and pass on his skills. Of the five A.P.V. videos featuring Hershel House, my favorite is *Building A Kentucky Rifle*.

In this film, House shows you step by step how he builds his sought after rifles. The featured project is a brass-mounted early Virginia rifle, relief carved and engraved with swamped octagon barrel. It is a beauty, and watching it develop from rough components is a joy to see. If you have children or grandchildren, these videos are a good history lesson to teach them of the days when self-sufficiency was a daily reality and not a coffee house concept.

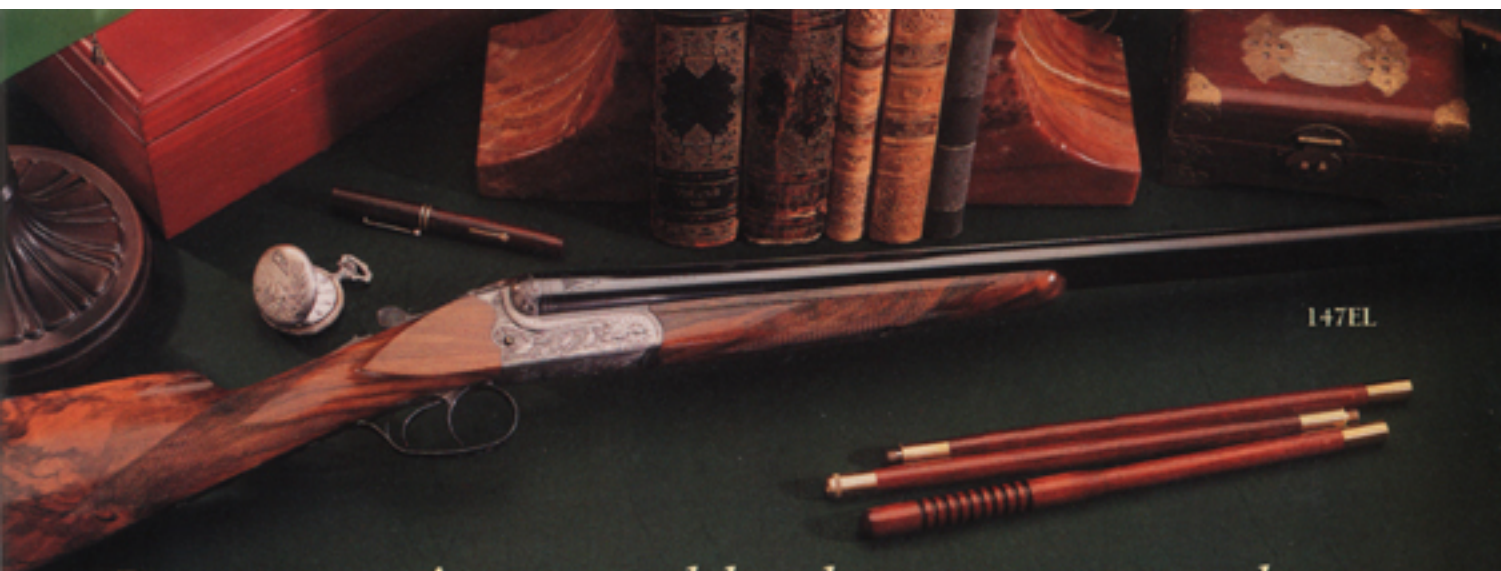
Call American Pioneer Video, and they will send you a list of current offerings. The price is a reasonable \$39.95 per video, with a quantity discount available.

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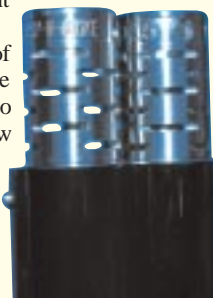


## PORTED CHOKE TUBES

Interchangeable choke tubes have been one of shotgunning's greatest advancements. Never before have competitors or hunters had greater control over the performance of their smoothbore, and never before has one shotgun been able to fill so many different roles. It still takes some time at the patterning board determining exactly what the right degree of constriction is for the load being shot. But that's time well spent and an education in itself.

More recently, the porting of shotgun barrels to reduce muzzle flip and felt recoil has become so popular that factories are now

*Ported choke tubes, like these by Comp-N-Choke, can reduce perceived recoil, reduce muzzle jump, and produce superior patterns.*



offering ported barrels as a matter of course. But suppose you don't shoot a ported barrel and don't want to incur the expense of porting? Maybe you simply don't want ports machined into a set of expensive barrels anyway.

The answer to the problem may be the ported choke tube, which is a hybrid that combines the advantages of both a choke tube and muzzle ports. It is becoming increasingly popular in both competition and hunting circles. It is also claimed that the ported portion of the tube retards the wad(s) slightly so that the wad is not driven into the shot column, which thereby results in a more uniform pattern.

Typical of the design are the Comp-N-Choke tubes I have been using in my 12-gauge Browning Citori this past hunting season. The Browning O/U design exhibits a high breech, and upon firing, the muzzles tend to flip a bit. The slot-porting IC and IM Comp-N-Choke tubes made a difference in felt recoil,

and recovery for a second shot was perceptively quicker. These are extended tubes that can be screwed in and out by hand.

Comp-N-Choke tubes are available in blued, stainless and titanium nitride finishes; in constrictions from negative .005 inch to positive .655 inch; and in 20-, 12-, and 10-gauge models. The company offers excellent recommendations for matching constrictions to shot sizes and intended field use. These are quality tubes that have won two NWTF World Still Target Championships and are available as replacement tubes for all standard shotgun models and tube designs.

You owe it to yourself to try a ported tube or two.

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## SNAP CAPS Inexpensive Protection

A set of quality snap caps, usually nickel-plated, has traditionally graced the case of every fine double shotgun, and with good reason. The snap cap, with a resilient buffer in place of the primer, is an invaluable tool for protecting and prolonging the life of firing pins and the size and shape of firing-pin holes in the standing breech of a SXS or O/U.

The snap cap has two purposes. During cleaning, it permits the gun owner to release the firing pins into a cushioned medium that



*Snap caps are essential tools, especially for SxS and O/U owners.*

protects both firing pins from material fatigue and prevents the distortion of the firing-pin holes. And a well-made snap cap also allows gun owners to dry-fire their gun with the assurance that they're doing no harm.

The Pachmayr Division of Lyman Products has just introduced a line of solid aluminum snap caps for every gauge and common centerfire calibers. What's nice about metal snap caps, rather than plastic units, is the ability of the metal rims to take the wear and tear imposed by the extractors and ejectors of semiautos and pumps.

Look for these new Pachmayr products at your nearest sporting goods store.

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## Brenneke Goes FULL BORE

There is an interesting dialogue within the slug gunning world over the benefits of various slug diameters. Basically, the discussion breaks down into two camps: those who feel the typical sabot-driven 12-gauge, .50-caliber projectile is as good as it gets; and those who feel that the closer the slug is to full bore-diameter, the more effective it will be on game.

I've used 12-gauge slugs representing both schools of thought on whitetail deer,



and I honestly haven't detected any superiority of one over the other.

Brenneke, that grand old company specializing in slug design, is firmly in the full-bore camp and has introduced two new sabot driven slugs to prove it. The first is a high-tech, brass-bodied, aluminum-cored 12-gauge SuperSlug that is a full .63 inch as shot with expansion to 1 inch upon impact. Upon impact, the pointed aluminum core is pushed inward exposing a .63-inch cookie-cutter opening at the forward end of the brass jacket. As loaded in 2¾-inch and 3-inch shells, the 490-grain

*Brenneke's new SuperSlug (right) and K.O. slugs represent the full-bodied school of slug design.*

SuperSlug is designed exclusively for rifled shotgun bores. Velocities are right up there at 1,526 fps.

The second new Brenneke slug is a more traditional looking 1-ounce, 12-gauge, full-bodied hollowpoint load known as the "K.O.," which is suitable for either rifled or smoothbore barrels.

Brenneke has an enviable name when it comes to slug design. The SuperSlug is a very different radical design that is worth exploring if you hunt in a slug-only zone. Note: the company's headquarters in the United States has new management and a new location



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# DUTY LOADS: TODAY'S BEST

***Recommendations for five calibers  
based on street performance***

---

By Massad Ayoob

---



*Match director and SWAT officer Jerry St. Pierre, right, congratulates Ayoob on winning the state shoot for cops. Mas used Black Hills 165-grain EXP .40 in Glock 22 to capture the high speed, 7- to 50-yard event. This is proof of the load's accuracy and controllability.*

Jeff Cooper once remarked that we should choose our caliber before we choose our gun. Why? Because the projectile is the purpose of the exercise and, therefore, more important than the launcher. Damn good point.

In a defensive handgun, the likelihood of stopping a human or animal attack (assuming correct shot placement) is generally the overriding concern, but it must be balanced with other factors. The shooter has to be able to control recoil for accurate rapid fire at what might be multiple threats or a single highly determined one. This is why we don't all carry .44 Magnums. Another concern in caliber selection is consistent availability of the right ammo. A smaller bore gun that's only effective with one or two types of ammo can be a liability if the ammo supply dries up. Twice in the last decade we all experienced severe ammo availability limitations: the buying panic that followed the Brady Act and the Crime Law, and the "stockpiling spree" in anticipation of Y2K. One advantage of a .45 is that just about any round you stuff in it will hit with some authority.

## **Perspective From The Street**

I review a large number of shooting reports and autopsies each year as an expert witness in homicide cases. I've also chaired the firearms committee of the American Society of Law Enforcement Trainers since its inception 14 years ago. This puts me in a position to get feedback from departments of all sizes as to how certain rounds function in actual shooting situations.

Gelatin testing and other laboratory protocols are useful, but they are only a piece of the puzzle. A bullet's performance in the homogeneous ballistic gel is not necessarily what it will be in the heterogeneous medium of a living mammal. In a real-world situation, the bullet passes through the varying resistance of hide or clothing, elastic skin, tough muscle, solid abdominal viscera, softer tissues, liquid, and hard bone.

Let's take a look at what's currently giving the best real-world results in the most popular defense calibers:





## .45 ACP

**230-grain JHP:** In standard pressure loads, these are the ones to beat. Federal's Hydra-Shok has been around the longest, with an unblemished record for high likelihood of stopping a gunfight with one or two chest hits. The bullet usually expands, particularly out of longer barrels. CCI's Gold Dot also expands as advertised. Both are extremely accurate. Winchester's SXT is another good choice. So is Remington's Golden Saber, though I've seen it occasionally fail to open as much as I'd like.

With regard to bullet testing, there is a big controversy between Evan Marshall and Dr. Martin Fackler. Marshall tracks gunfight reports, and Fackler relies largely on gelatin testing. Fackler recommends SXT, while Marshall sees the best results with Hydra-Shok. Flip a coin, or be an individualist: when I tested 230-grain standard pressure .45 loads in the slaughterhouse a few years ago for this magazine, the PMC El Dorado StarFire gave the most dynamic results.

An advantage of 230-grain JHP is that once you know it'll feed in your gun, you can practice with cheap generic hardball and have pretty much the same recoil and point-of-aim/point-of-impact as your duty load.

**+P:** Do you need an added pressure load in your .45 auto? It depends. Winchester's standard pressure 185-grain Silvertip approaches 1,000 fps in a 5-inch gun, though in years past its velocity was lower. Countless shootings have shown that this bullet will almost always expand and stay in the body. This, along with lighter recoil than comparable pressure 230-grain rounds, makes it a good defense choice for your home or store. However, at +P pressure, a 185-grain bullet is running about 1,150 fps out of a 5-inch barrel and at about 1,070 fps from a shorty. At that speed, you're going to get more violent tissue disruption. For me, a big advantage of 185-grain +P is that at 75 or 100 yards, it'll usually print

where the sights are if the gun is sighted in dead-on for 230-grain ball at 25 yards. This makes it my choice when I'm anywhere where a long shot might be required.

The 230-grain bullet hits harder at +P velocity (950 fps from a 5-inch) than standard pressure at about 850 fps. The question is whether that's worth the significantly greater recoil. I'd rather go with a 185-grain fast-stepper in a +P, or the 200-grain version from Speer and Pro-Load (1,050 fps). Both use the very wide-mouth Gold Dot bullet. I've seen this Gold Dot's predecessor — the old CCI 200-grain flying ashtray bullet of the same weight and shape at the same velocity — blow the eyes out of a steer's head from the intracranial pressure of a brain shot. That bullet measured a true inch in diameter when recovered from the back of the steer's shattered head. However, wide-mouth 200-grain bullets don't feed well in every single .45 out there. *When in doubt: Federal 230-grain Hydra-Shok.*



*Gold Dot .45 delivered this excellent group at 25 yards with Laughridge Custom Para Ordnance LDA single stack. The round's wound ballistics are equally impressive.*



For up-close and personal self defense, Mas has seen no .40 S&W round that beats the 135-grain JHP at 1,300 fps. This is the Pro-Load Tactical with subcompact Glock 27.



### .40 S&W

**180-grain subsonic:** With the paper ballistics of the frontier .38-40 revolver round or a low end .45 auto, this bullet worked out better than most of us thought it would a decade ago. Still, having greater sectional density than a .45 auto bullet of about the same weight and velocity, it's more likely to overpenetrate. The single best of these rounds I've run across is Winchester's Ranger Talon. Good news: All of the half-dozen I've seen recovered from human bodies have expanded as advertised, and all but one stayed in. All were also fatal. Bad news: The Ranger Talon is sold only to police departments.

**Medium Weight:** A 150- or 155-grain bullet at 1,200 fps, or a 165-grain at 1,150 fps puts the .40 S&W awfully close to a 158-grain .357 Magnum (1,240 fps) with a wider bullet. Street results have been excellent. Every 155-grain Winchester Silvertip I've seen recovered from a

shooting has expanded dynamically. The Border Patrol reports phenomenally good results with the 155-grain Remington JHP out of its Beretta .40s, and Nashville Metro has had spectacular results with the Winchester Ranger Talon 165-grain out of its Glock 22s. This doesn't apply to the subsonic version of the 165-grain developed for FBI, which worked so poorly that Speer stopped making it. With more optimum human body penetration than the 180-grain and good performance on window glass and other tactical barriers, full power 150- through 165-grain JHP may be the ideal range for police ammo in the caliber. I'm personally partial to the superbly accurate Black Hills EXP load, with the CCI Gold Dot 165-grain bullet at 1,150 fps.

**Light Weight:** Cor-Bon introduced the 135-grain .40 JHP at 1,300 fps, now also offered with superb accuracy and quality control by Pro-Load in its Tactical series. At this velocity, wounds equal or exceed those of the legendary 125-grain .357 Magnum revolver load. However, delivering about 10 inches of penetration in flesh-simulating gelatin, these loads fall short of FBI tactical penetration standards. They are just right, however, for a face-to-face situation where there are no hard objects in the line of fire — a common self-defense situation. *When in doubt: 155-grain Winchester Silvertip or 165-grain Black Hills EXP (police), 135-grain Pro-Load Tactical (civilian).*

### .357 SIG

**125-grain JHP:** Forget the 115- and 150-grain variants: there have not been enough shootings with them to establish a track record. The 125-grain, however, has earned a splendid reputation for stopping power, and in less than a decade of use. Secret Service (with SIG P-229s) and North Carolina Highway Patrol (with Beretta Cougars) both adopted the Winchester Ranger Talon round, but neither has had enough shootings to develop a data base. Departments like Virginia State Police (SIG P-229), Richmond, VA PD (Sig Pro), and Texas Department of Public Safety (SIG P-226) have all had numerous shootings using 125-grain CCI Speer Gold Dot. And all have been uniformly thrilled at the results. Spokespersons for VSP and RPD told me that they were delighted with the fast stopping effect compared to the 147-grain subsonic 9mm they had before, on both human offenders and pit bulls.

I've run across rare case-neck separations in .357 SIG with Winchester, REM-UMC and Starline brass, but never with the CCI. CCI did have one bad lot that got out recently, but the company quickly and responsibly called it back. It's the first brand I'd recommend at this time. *When in doubt: CCI Speer Gold Dot 125-grain JHP*

### 9mm Parabellum

**147-grain:** The faddish adoption of the 147-grain subsonic 9mm took more than a decade of street experience to stamp out. Sometimes it worked, sometimes it didn't. I saw cases where even the vaunted Black Talon overpenetrated and failed to do the job. The great majority of departments that issued it, including its parent agency, the FBI, have now either gone to .40s, .45s or .357 SIGs, or have gone to a more effective, lighter bullet/higher velocity 9mm round. In good conscience, I cannot recommend any 147-grain subsonic 9mm round for self-defense or police service.

**+/-125-grain:** Caught between cops who believed in Fackler (slow 147-grain) and those who believed in Marshall (fast 115-grain), many police decision-makers have decided to split the difference and go with something in the mid 120-grain range. The best results have been with the hot +P and +P+ loads at around 1,250 ft.sec. NYPD adopted the hot CCI

*continued on page 65*



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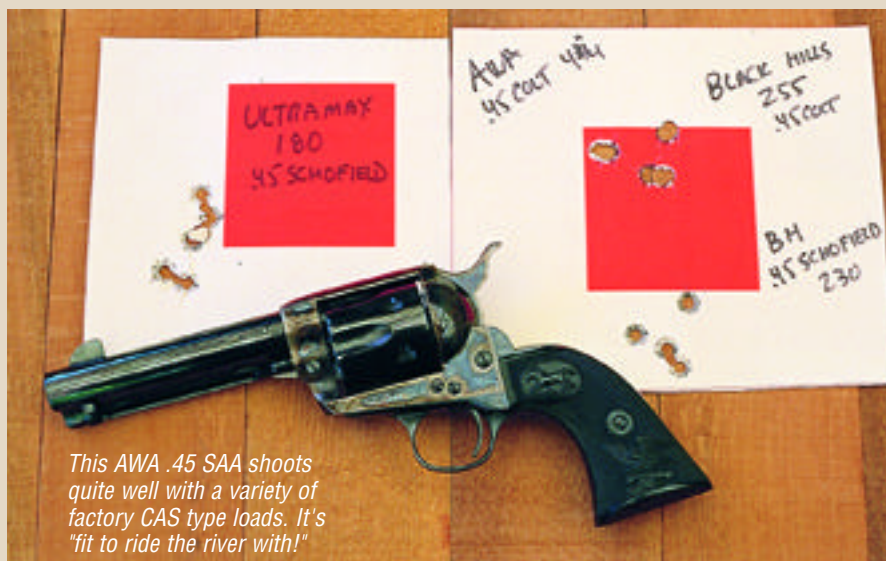
By John Taffin



*The old-time packaging may not make this Cor-Bon produced ammo shoot any better, but it sure adds to the flavor of shooting original first-generation Colts like these.*

# Factory Loads For COWBOY Action Shooting

Soft shootin' loads in forgotten calibers are great fun whether you're a Cowboy Action Shooter or not.



*This AWA .45 S&W shoots quite well with a variety of factory CAS type loads. It's "fit to ride the river with!"*

About 15 years ago, I received a call from one of the top gun designers in the country. He had managed to acquire a presentation-cased Smith & Wesson New Model No. 3 in .44 Russian that dated back to the 1870s. This beautiful old sixgun had originally been shipped to Japan and had somehow remained in unfired condition for over 100 years. I was called to see if I could find some ammunition for this beautiful big-bore sixgun. No, he didn't want to fire it — he simply wanted to have about a dozen rounds on hand just in case it was ever needed. That made good sense to me!

The last sixguns chambered for the .44 Russian came off the line in the pre-Depression days, and ammunition hadn't been manufactured since before World War II. However, I called a cartridge collector and was able to get my hands on a dozen original .44 Russian rounds. About the same time, I managed to acquire two unopened boxes of original .44 Russian brass. I put it away in a safe place knowing I would never see it's like again. I was wrong!

## Times Have Changed

Now, thanks to the sport of Cowboy Action Shooting (CAS), we not only have .44 Russian brass once again, but we also have factory ammunition and factory-chambered firearms for this vintage sixgun cartridge. And it doesn't stop there. Other cartridges that haven't been seen since the Frontier period are back, such as the .44 Colt, the .45 Schofield and the .38 Long Colt. The .32-20, the .38-40 and the .44-40 have all been given new life. And the .45 Colt, which has been proclaimed dead and buried by "experts" in every generation since the advent of the .38 Special and .45 ACP, is the reigning champion of single-action sixguns once again. The .45 Colt, which is often erroneously called .45 Long Colt, remains the king — even though it has been emasculated by those who would replace its original 255-grain bullet with lightweight bullets of 200-grain or less. To me, this is somewhat akin to driving a V-8 on a go-kart track.

Fifteen years ago, both Remington and Winchester offered .45 Colt loads that virtually duplicated the original loads from the 1870s. Both companies also offered a 246-grain round-nosed .44 Special load that was the same as the one originally offered in 1907. Add in round-nosed .38 Specials, and that was about it as far as the old-style cartridges. All, of course, were loaded with lead alloy bullets. It was also possible to find .32-20s loaded with lead bullets; however, I don't recall seeing anything offered in .38-40 or .44-40 except jacketed bullets. CAS rules require plain-based lead alloy bullets at muzzle velocities under 1,000 fps from sixguns. This not only duplicates the cartridges



from the Frontier period, but it's also a safety measure for shooting metal targets. The standard bullet offered by manufacturers of CAS ammunition is the RNFP (round-nosed flat point). These loads and bullet shapes are easy on targets and safe for use in the tubular magazines of leverguns.

## That Was Then, This Is Now.

There are currently at least nine companies that offer factory-loaded ammunition which is specifically designed for Cowboy Action Shooters. The companies include Black Hills, Cor-Bon, Hornady, MagTech, PMC, Ten-X, Ultramax, Winchester and 3-D.

Let's take a brief look at each cartridge and how it performs, and also go over the ammunition each company offers.

Cowboy Action Shooting participants need two single-action sixguns and a levergun. The guns may all be chambered for the same cartridge, or each may take a different cartridge. The former is the easiest, while the latter can become confusing. In addition to the sixguns and levergun, each shooter also needs a shotgun, which, as is the case with the sixguns and leverguns, must be original to the time frame before 1899 or a reasonable replica thereof. When it comes to the shotgun, most participants have used low-recoiling birdshot shotgun rounds; however, we are starting to see 12-gauge ammunition arrive that is strictly designed for Cowboy Action Shooters. This includes black-powder loads from Cor-Bon and Ten-X, and special low-recoiling loads from PMC.

Side matches using single-shot and/or lever-action rifles are also becoming increasingly popular. Because of this, several companies are now offering such loads as .30-30, .38-55 and .45-70, all loaded with plain-based lead alloy bullets.

## Cartridges

**.45 Colt:** This is *the* Single Action Cartridge. It was first chambered in the Colt Single Action Army Model of 1873 — the Model P, the Peacemaker, the Hogle, the Equalizer. Whatever name you call it, the original loading of a 255-grain bullet over 40 grains of black powder was an awesome load and proved to be too powerful for most users. It was soon cut back to 30 grains for military use and 35 grains for civilian use. In a 7½-inch barreled sixgun, the former yields around 750 to 800 fps, while the latter comes in at 875 to 925 fps. Most current factory loads for Cowboy Action Shooting duplicate the 30-grain load. The .45 Colt is currently chambered in Colt Single Actions; Ruger Vaqueros and Blackhawks; Colt, Remington, and Smith & Wesson replicas; leverguns from Marlin and Winchester; and replicas on the Winchester 1866, 1873 and 1892 platforms.

**.45 S&W (.45 Schofield):** In 1875, Major Schofield collaborated with Smith & Wesson to bring out an improved Model of the No. 3 chambered in .45 instead of .44 Russian. The cylinder of the Smith & Wesson, being shorter than that of the Colt Single Action Army, wouldn't accept the standard .45 Colt round, so a shortened version of the cartridge was employed — the .45 S&W. In the shorter case, 28 grains of black powder gave over 800 fps, and the cartridge would work in either Smith & Wesson or Colt Single Actions. Trouble arose when units armed with Smith & Wessons found themselves supplied with the longer .45 Colt rounds that wouldn't chamber. Adopted in 1875 by the U.S. Army, the Schofield was dropped in 1877. Today's CAS shooters have found that the .45 Schofield is a much more efficient case for use with smokeless powder and when loading 230- to 250-grain bullets at velocities ranging from 700 to 900 fps.

**.44-40 (.44 Winchester Centerfire or .44 WCF):** Arriving in 1873, the same year as the .45 Colt, the .44-40 was the original chambering in Winchester's Model '73. By

## TEST-FIRING THE COWBOY ACTION SHOOTING LOADS

*Groups: 5 Shots at 50 Feet For Six-guns,  
50 Yards for Leverguns*

### BLACK HILLS COWBOY AMMUNITION

LOAD	FIREARM	MV	GROUP
<b>.45 Colt 250</b>	Ruger Vaquero 7 1/2"	844	1 1/2"
	Rossi M92 20"	993	3/4"
	Marlin 1894 24"	1002	1 1/4"
<b>.45 S&amp;W 230</b>	Ruger Vaquero 7 1/2"	792	1"
	Navy Arms Schofield 7"	706	1"
<b>.44-40 200</b>	Colt SAA 5 1/2"	832	1 3/4"
	Navy Arms M73 20"	1151	1 1/4"
	Rossi M92 20"	1173	1"
<b>.44 Russ 210</b>	Colt SAA 7 1/2"	745	1 1/2"
<b>.44 Colt 200</b>	Colt SAA 7 1/2"	774	1 1/2"
	CFA 1860 Conversion 8"	700	1 1/2"
<b>.44 Colt 230</b>	Colt SAA 7 1/2"	752	1 1/2"
	CFA 1860 Conversion 8"	689	2 1/4"
<b>.38-40 180</b>	Colt SAA 4 3/4"	894	1 5/8"
	Ruger Blackhawk 4 3/4"	998	7/8"
	EMF Hartford 7 1/2"	929	1 7/8"
	Winchester M92 20"	1250	1 3/4"
<b>.38 LC 150</b>	CFA 1851 Conversion 5"	668	1 3/8"
	Colt SAA 5 1/2"	676	1 1/2"
	Great Western 7 1/2"	682	1 1/8"
<b>.32-20 115</b>	Colt SAA 8 1/2"	924	1 1/8"
	Marlin 1894C 20"	1181	1 1/8"
<b>.38 Spec 158</b>	CFA 1851 Conversion 5"	697	7/8"
	Colt SAA 5 1/2"	723	1 3/4"
	Great Western 7 1/2"	692	1 1/4"
<b>.44 Spec 210</b>	Colt SAA 7 1/2"	774	1 5/8"
	Colt SAA 4 3/4"	720	1 3/4"
<b>.357 Mag 158</b>	FA M97 7 1/2"	855	5/8"
	FA M97 5 1/2"	770	1 1/8"
	Colt New Frontier 5 1/2"	737	7/8"
	Ruger Blackhawk 4 5/8"	768	1 5/8"

1878, it was also chambered in Colt's Single Action Army, which gave shooters the option of having both their sixgun and levergun chambered for the same cartridge. This slightly bottlenecked cartridge was originally loaded with a full 40 grains of black powder that drove its 200-grain bullet well over 1,100 fps from a sixgun and nearly 1,400 fps from a levergun. Current factory loads for CAS Shooters range from 750 to 850 fps with a sixgun. The advantage of the .44-40 both in the Frontier Period and now over the .45 Colt is a considerable reduction in felt recoil.

**.44 Russian:** Three years before Colt brought out the Single Action Army, Smith & Wesson introduced the first big-bore sixgun that fired fixed ammunition. This was the Model No. 3 American chambered in .44 S&W American. The Russians suggested improvements to both the sixgun

## TEST-FIRING THE TEN-X COWBOY ACTION SHOOTING LOADS

LOAD	FIREARM	MV	GROUP
<b>.44 Russ 200</b>	Colt NF .44 Russ 7 1/2"	702	1"
	Colt NF .44 Spec 7 1/2"	755	1"
<b>.44 Colt 200</b>	Colt NF .44 Spec 7 1/2"	676	1 5/8"
	Ruger SB .44 Mag 7 1/2"	678	1 1/8"
<b>.44 Colt BP</b>	Cimarron 1860 Cnvsn 8"	642	1 1/2"
<b>.44 Spec 200</b>	Colt NF .44 Special 7 1/2"	634	1 3/8"
	Ruger SB .44 Magnum 7 1/2"	703	1 1/8"
<b>.44-40 200</b>	Colt NF .44-40 7 1/2"	678	1 7/8"
<b>.45 Colt 250</b>	Colt NF .45 Colt 7 1/2"	695	1 1/8"
	Ruger OM .45 Colt 7 1/2"	801	7/8"



# TEST FIRING THE ULTRAMAX COWBOY ACTION SHOOTING LOADS

LOAD	FIREARM	MV	GROUP
.45 Colt 250	Colt New Frontier 7 1/2"	710	1 7/8"
	Ruger OM Blackhawk 7 1/2"	798	7/8"
	Ruger Bisley 7 1/2"	780	1 3/8"
	Marlin Cowboy 20"	954	1 1/4"
.45 S&W 230	Colt New Frontier 7 1/2"	654	1 3/4"
	Ruger Bisley 7 1/2"	727	1 1/2"
	Marlin Cowboy 20"	859	2"
.44-40 200	Colt New Frontier 7 1/2"	834	1 1/4"
	Marlin Cowboy 20"	1170	1 1/2"
.38-40 180	Ruger Blackhawk 4 3/4"	809	1 5/8"
	Winchester M92 20"	1048	2"
.44 Spec 200	Colt New Frontier 7 1/2"	758	1 1/4"
	Ruger Flat-Top 7 1/2"	753	1 7/8"
	Ruger Bisley 7 1/2"	772	1 3/8"
	Browning M92 20"	972	2 1/4"
.44 Mag 240	Ruger Flat-Top 7 1/2"	734	1 1/4"
	Ruger OM Super B. 7 1/2"	740	7/8"
	Bisley 7 1/2"	727	7/8"
	Browning M92 20"	946	2"
.357 Mag 158	Ruger Bisley 7 1/2"	741	1 7/8"
	Ruger OM Blackhawk 6 1/2"	704	1 1/2"
.38 Spec 158	Ruger Bisley 7 1/2"	808	2 1/2"
	Ruger OM Blackhawk 6 1/2"	749	1 5/8"
	Freedom Arms M97 7 1/2"	856	1 3/8"
	Colt SAA 8 1/2" Adj.Sights	847	1 1/4"
.32-20 115	Winchester M92 20"	1070	1 5/8"

and cartridge when they placed a large order with Smith & Wesson. Instead of an outside lubricated bullet with a smaller heel that fitted inside the case, the Russians changed it to an inside lubricated bullet of uniform diameter. This was a great step forward. The .44 Russian enjoyed a well-deserved reputation for accuracy. The original load was 23 grains of black powder at 750 fps. Today's factory loads duplicate this with a lighter 210-grain bullet.

**.44 Colt:** To counter Smith & Wesson's offering of the Model No. 3 in .44 American, Colt began converting the 1860 Army to fire fixed ammunition. The cartridge, using a heel-type bullet like the .44 American, achieved 750 fps with a 210-grain bullet over approximately 21 grains of black powder. Today's version of the .44 Colt, which is chambered in both replica Colt Cartridge Conversions and also the 1871-72 Open-Tops, features the same diameter bullet as the .44 Russian/.44 Special/.44 Magnum. The cartridge case itself is longer than the .44 Russian and only slightly shorter than the .44 Special.

**.38-40 (.38 Winchester Centerfire or .38 WCF):** Neck the .44-40 to .40-caliber and we have the .38-40. It was first chambered in the Model '73 Winchester in 1879 and then followed in the Colt Single Action Army around 1884. By going from .44 (actually .43-caliber) to .40-caliber, bullet weight was reduced from 200 to 180 grains. The original powder charge was the same as used for the .44-40, which means the original loading was well over 1,000 fps from a Colt Single Action Army. Today's factory loads range from 800 to 900 fps from a six-gun and around 1,250 fps from a levergun. Cowboy Action Shooters are beginning to discover the virtues of the .38-40, such as

excellent accuracy and reduced recoil. The .38-40 is offered in replica Single Action Armys and the 1873 Winchester, just as it was in 1884.

**The .38 Long Colt:** When Colt brought out its first double-action sixgun, the Lightning, in 1877, it was chambered in .38 Long Colt and originally used a heel-type bullet. When the switch was made to inside-lubricated bullets, the .38 Long Colt was manufactured with the same diameter bullet as current .38 Specials and .357 Magnums. This is the cartridge that was adopted by the U.S. Army in between the .45 Colt of 1873 and the .45ACP of 1911. Today's version uses a 150-grain bullet at around 700 fps, which makes it an excellent choice for those that want to be authentic but for some reason can't handle the recoil of the larger cartridges.

**.32-20 (.32 Winchester Centerfire or .32 WCF):** This was the third WCF cartridge offered in the Winchester Model 1873 and was also subsequently chambered in the Colt Single Action Army. It was actually the most popular chambering in the Colt Bisley Model, which was originally designed for target shooting. This is simply a grand little cartridge for single-actions or leverguns. Recoil is almost nonexistent. Current factory loads are around 850 to 900 fps in a 7½-inch replica Single Action Army. Cimarron offers leverguns chambered for this delightful little cartridge.

**.38 Special:** This is the first of four cartridges used in CAS Shooting that postdate the Frontier Period. Originally chambered in Smith & Wesson's Military & Police, this was probably the most popular sixgun cartridge of the 20th century. Many Cowboy Action Shooters looking for the fastest pos-

sible time have turned to sixguns chambered in .38 Special. Factory loads for Cowboy Action Shooting range from 700 to 850 fps. The .38 Special is mostly used in sixguns and leverguns chambered for .357 Magnum.

**.44 Special:** Arriving about 10 years after the .38 Special, the .44 Special is simply the .44 Russian slightly lengthened. It has had a long and glorious career with its heaviest loadings leading to the .44 Magnum in 1956. Most current CAS loads duplicate the original load of a 246 round-nosed bullet at about 750 fps. Replica Colt Single Actions are offered in .44 Special, and it also works just fine in .44 Magnum sixguns and leverguns.

**The .357 Magnum:** The original Magnum arrived on the scene in 1935. Since there are so many single-actions and leverguns available in this chambering, it makes sense for ammunition companies to offer a Cowboy Action Shooting load for the .357 Magnum. Current factory loadings for CAS offer velocities of 855 to 990 fps from long-barreled sixguns.

**The .44 Magnum:** The same condition of availability of sixguns and leverguns exists with the .44 Magnum as with the .357 Magnum, so again we have Cowboy Action Shooting loads for the .44. Factory CAS loads for the .44 Magnum are in the 900 fps range and are also a good choice for non-Cowboy Action Shooters who simply want a pleasant loading for their .44 Magnum.

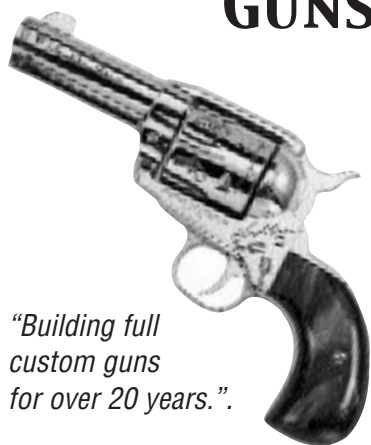
## The Companies

**Black Hills** was the first ammunition company to really see the potential in Cowboy Action Shooting. It worked with companies such as Starline, Cimarron and AA Bullets to bring together the brass, the sixguns and the bullets to develop Cowboy Action Loads. Starting with the .45 Colt, Black Hills then followed with the .44 Special, .38 Special and .357 Magnum. As Starline began offering brass for the old cartridges, .38-40 and .44-40 were both offered





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by Black Hills and then were followed by .45 Schofield, .32-20, .38 Long Colt, .44 Russian and .44 Colt. Starline also offers a .45-70 loading with a 405-grain bullet that duplicates the Frontier loadings.

**Cor-Bon**, a long-known supplier of both hunting and defensive loads, has ventured into Cowboy Action Shooting by providing "black powder" loads that use the black powder substitute Clean Shot. Current offerings include .45 Colt, .44-40 and .38 Special, all loaded in 12-round boxes, like the originals, and then loaded in larger containers of eight 12-round boxes. A Clean Shot loading of the .45-70 is also cataloged by Cor-Bon.

**Hornady** has two Cowboy Action Shooting loads, a 255-grain .45 Colt at 800 fps, and a 205-grain .44-40 at 750 fps.

**Magtech** offerings for Cowboy Action Shooters include .45 Colt, .44-40, .44 Special and .38 Special.

**PMC** has a well-deserved reputation for defensive and hunting cartridges and now offers the same basic four rounds offered by both MagTech and Winchester. PMC now offers the .357 Magnum and both .30-30 and .45-70 loaded to Cowboy Action Shooting levels. It also offers very attractive, period-style cartridge boxes.

**TEN-X** has the most complete line-up of Cowboy Action Shooting loads with 40, many of which cannot be found anywhere else. These include .41 Long Colt, .32-40, .38-55, .38-56, .40-65, .45-60 and .50-70, as well as black powder equivalent loads in .357 and .44 Magnum — Great lookin' boxes also.

**Ultramax** deserves some kind of an award for the best looking period-style advertising matched up with extremely attractive cartridge boxes. Both catch the spirit of the 1880s. Ultramax provides Cowboy Shooters with all of the mentioned sixguns loads except .44 Colt, and also adds .30-30, .38-55 and .45-70.

**Olin/Winchester** offers the basic lineup of Cowboy Action Shooting loads in .45 Colt, .44-40, .44 Special and .38 Special. Winchester's boxes are particularly attractive and fit right in with the time period

applicable to Cowboy Action Shooting. One can almost spiritually connect with the 1880s when using Winchester ammunition

**3-D** has long offered defensive, law-enforcement, and competition ammunition under the Impact label. Cowboy Action Shooting offerings are the standard four: .45 Colt, .44-40, .44 Special and .38 Special. For those who want to use modern ammunition loaded to 1880s specifications in their modern Magnums, 3-D also provides Cowboy Action Shooting loads in both .357 and .44 Magnum.



### FOR MORE INFORMATION:

#### 3-D Ammunition

[www.3dammo.com](http://www.3dammo.com)  
[308] 382-1390

#### Black Hills Ammunition

[www.black-hills.com](http://www.black-hills.com)  
[800] 348-5150

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[909] 605-1617

#### Ultramax Ammunition

[605] 342-4141



Gary Reeder at the bench.



**T** rue art needs no explanation; it simply hits you emotionally. Admittedly, there are exceptions. Much of Picasso's stuff needs an explanation... at least to me. But not handgun art. When I look at the creations of Gary Reeder, I'm moved to the point of reaching for my wallet, which for me is an act of great emotion!

Reeder owns the Pistol Parlor in Flagstaff, a town in the mountains of Arizona. Flagstaff is one of God's secret vacation resorts. While the area does attract and inspire a number of artists, Reeder was building firearms back in Tennessee during the late '70s and early '80s. Combining careers as a gunsmith and rock 'n roll disk jockey took Reeder from Tennessee to Florida to New Mexico — and finally to Arizona in the '90s. He is self-trained and began working on his own guns even before finishing high school.

### The Right Attitude

"It's one thing to mess up on your own guns," he says. "But I never try a modification on a customer's gun until I have successfully completed it on mine."

When you look at the masterpieces that are displayed on his Website, it's hard to imagine him ever making an error.

Despite a focus on handguns, Reeder does work with some rifles. He likes the Ruger Number 1 single-shot and periodically makes a limited run of full custom guns and calibers. For those wanting that special rifle for Africa, he offers his *Big Five Classic* Ruger in caliber .500 Jeffery. For the lever gun enthusiast heading to the Dark Continent, he blows out the .45-70 cartridge to accept a .475 bullet (called a .475 GNR), chambers it in a Marlin 1895, and calls it the *Buffalo Hunter*. If you're heading north to tackle the big bears in the dense alders, check out his *Alaskan Classic*, a Marlin 1895

chambered in .45-70 with the barrel cut to 16 inches. Cowboys wanting something a cut above the ordinary can either choose between his Custom 1886 *Winchester* and 1866 *Yellowboy*. If there's a beat-up 1892 Winchester in your closet, Reeder can restore that to a condition that will generate envious glances at your next match.

Handgun hunters who are fond of Thompson Center single-shots should also take a peek at his Website. Reeder customizes Contenders and Encores to include the special barrel length of your choice in calibers that will bring down any critter you could dream of hunting. But the bulk of his work seems to be on revolvers, with a focus on cowboy shooting, handgun hunting and compact carry.

### Near Endless Variety

Perhaps as impressive as the quality of his work is the variety of custom handgun work he offers. For example, he converts the var-





*All the bases are covered with three classic selections from Reeder Custom Guns.*

# Meet The Gunsmith GARY REEDER

**By Dick Williams**

## A brief look at one of America's most prolific custom gunsmiths

ious Ruger single-action revolvers to the big, specialty calibers such as .475 and .500 Linebaugh much like other custom smiths do. He also makes his own stretched frames and cylinders for the super calibers like .475 and .500 Maximum. He will reshape your grip or make a new one of his own design — such as his incredibly comfortable Gunfighter grip — and then make custom grip panels of semi-exotic materials that fit perfectly.

### Not Shopping For A Big-Bore Revolver?

Reeder offers his *Coyote Classic*, a converted Ruger Super Blackhawk chambered for a variety of the shorter .22-caliber center-fire cartridges. If you want multiple, interchangeable cylinders for the same gun, order one each in .22 Hornet, .22 K Hornet, or .218 Bee. If you're looking for something a little out of the ordinary, you might like one of his GNR series of proprietary chamberings, like

maybe a .41 Mag case necked down to .357, or a .44 Mag case necked to .41-caliber. You end up with dramatically improved performance in your .357 or .41 and no set-back problems with fired cases.

Thinking more “artsy” than functional? He does some beautiful work in various finishes and relatively inexpensive engraving. I find his velvet chrome and black chromex finishes tremendously appealing. Not only do they look great but they also wear well. And a velvet chrome front sight is more visible in the dim light of early morning or late evening without being shiny enough to cause a blinding glare in the bright sunlight of midday. Once a theme is selected for a series of handguns, the engraving, picture selection, and even the functional design changes on those custom handguns which support that theme, e.g. the *Black Widow* or the *Backpacker*. This leads me into a discussion of the sample Reeder custom handgun chosen for this review.

### Purpose Built

The Backpacker is exactly what the name implies. It's a lightweight handgun that can be comfortably carried all day over mountain or desert trails without adding unnecessary weight or undesirable bulk to the load of a hiker. But the really serious comfort afforded by this gun is that its .45 Colt chambering allows you to deal with almost any possible threat situation you might encounter.

The gun sent to me began life as a standard Ruger Vaquero in caliber .45 Colt, but if you would prefer a different caliber, Gary will oblige: The barrel, ejector rod, and ejector rod housing have been cut to 3 inches; a special nonsnag front-sight blade has been installed; the muzzle crown has been recessed to protect the rifling from inadvertent dings; and the factory grip frame has been replaced with one made of lightweight aircraft aluminum fitted with black Micarta panels.

*continued on page 72*





# Tarnish, Bumps and Blemishes

**M**any handloaders care almost as much about how their ammo *looks* as how it shoots. Some go to fanatical lengths to produce handloads that rival factory stuff in shine. Others, however, wouldn't dream of polishing brass. I shoot all the time with a guy like that. Even though somebody gave him a brass tumbler, his brass is dull and tarnished. But his ammo goes *bang* every time, and it seems to be quite accurate, too.

Another regular guy at the range has ammo that is the envy of all. His cases sparkle, and his lead has a silvery shine that would fool The Lone Ranger. But when it comes down to it, his polished ammo goes *bang* with the same force and accuracy as the unpolished stuff.

Each of these handloaders can give you a perfectly rational explanation of why he loads the way he does. The guy who never polishes his brass says that it takes too much time. The other one says it takes no time at all because the tumbler does all the work.

So who is right?

It depends on your point of view. Shinier ammo is in no way *better* than grungy looking stuff, but there is something to be said for cleaner brass. It's easier to load, and it's easier on dies, too. If you've ever sized a piece of tarnished brass, you know that it takes considerably more effort. Even with carbide dies, you can really feel a difference. Cleaner brass is also going to be easier on the dies. It only takes a little grit embedded in the soot on the dirty case to scratch a die. So I think some degree of cleaning is a good idea. My normal practice is to run brass for an hour or two in the tumbler as soon as it's fired and then leave it until I'm ready to load it. I've tried to figure out which is the better cleaning media, and I honestly don't see much — if any — difference between walnut hulls and corncobs. Right now I'm using ground corncobs with a touch of Dillon's Rapid Polish added. This does a good job, and while the cases may not be spotless, it works for me.

You also need to be cautious with additives, especially those that contain ammonia or acids. I'm sure you've heard of folks going to inordinate lengths to shine up brass they found at the range or someplace. This is almost always more trouble than it's worth. Brass that has been out in the weather for any length of time is going to be heavily oxidized or corroded. Sometimes it's positively black. No amount of tumbling is going to make that brass look new, and any chemical that will make it shine does so by dissolving metal. That black color isn't something just stuck on the case; it's a product of a chemical reaction between the brass and something in its environment. This is dangerous and really a false economy of the worst kind. If you remove the color, you remove brass. Since solutions with some form of ammonia are among the best rifle bore cleaners — which means they attack copper and brass — they have no place in our tumblers. And I've always wondered if it's worth all the effort to resurface something that costs so little anyhow.

## Bumps And Bulges

If you look closely at a lot of reloads, you'll sometimes see a bulge or line in the case wall that shows where the base of the bullet lies within the case. I get letters about that, too.

Once more, it has to do with your point of view. The guy who has the spotless brass would probably complain about a bump or bulge. I would surely agree that they can be

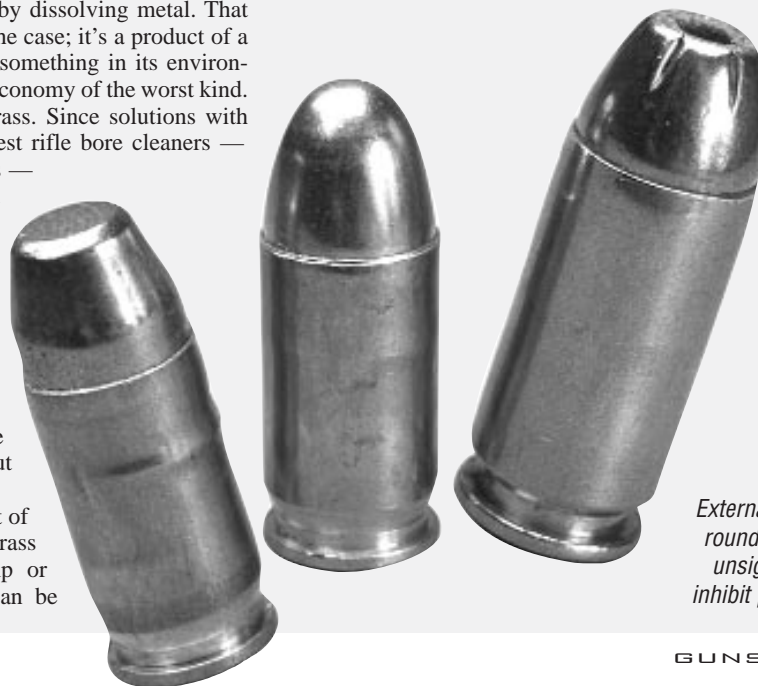
unsightly, but they are often unavoidable, and, more importantly, they are usually harmless.

With a handgun cartridge, we have to expand the case mouth a bit to allow a bullet to be seated. We don't want to do that too much because we must rely on friction and crimp to hold the bullet in place. This raises the issue of bullet pull, which is a term you don't hear mentioned very often in handloading. That's because, for us, it's usually automatic. Die manufacturers take care of that for us in the design of the expanding die. When we adjust the expanding die of a handgun cartridge, we actually do two different things. The first step is to expand a portion of the case body to a size that is a few thousandths of an inch *smaller* than the diameter of the bullet. This ensures that friction will hold the bullet in place. The second part is to put a slight bell on the case mouth so that the bullet can be started with ease.

If you take the expander out of the die, you can see that it's made to expand only that portion of the case which would normally contain the bullet. But with the variety of bullet weights available to handloaders, sometimes it doesn't work out right. A good example is the 147-grain 9mm bullet, which is much longer than normal and will often result in a harmless bulge of the cartridge case in the area of the base of the bullet. That's why some bullets of that weight tend to have a modified boat tail shape to keep the base of the bullet from contacting the case wall at all.

Sometimes we'll see a bulge on one side of the case but not the other. No, the bullet isn't seated crooked. What we see is the fact that brass cases can't always be perfectly concentric. Variations in thickness of the case wall may be enough to show up as bulges.

The vast majority of the time, the sort of bulges we see are absolutely benign and don't interfere at all with function. The simplest thing to do is try them in the chamber. As long as they fit, there's no harm. A while back I got a letter from an unhappy reader who was having a fit with bulges appearing on his loaded rounds. He tracked it down to the point where he learned that only one make of brass was doing it. Now the ammo worked just fine, but it *looked* positively awful. My advice: Either don't use that brand of brass, or learn to live with it. If the reload won't go in the chamber, then there's a real cause for concern and the problem must be solved, but otherwise I think it's easier to accept that this isn't a perfect world.



*External bulges on loaded rounds such as these are unsightly, but they don't inhibit proper chambering.*





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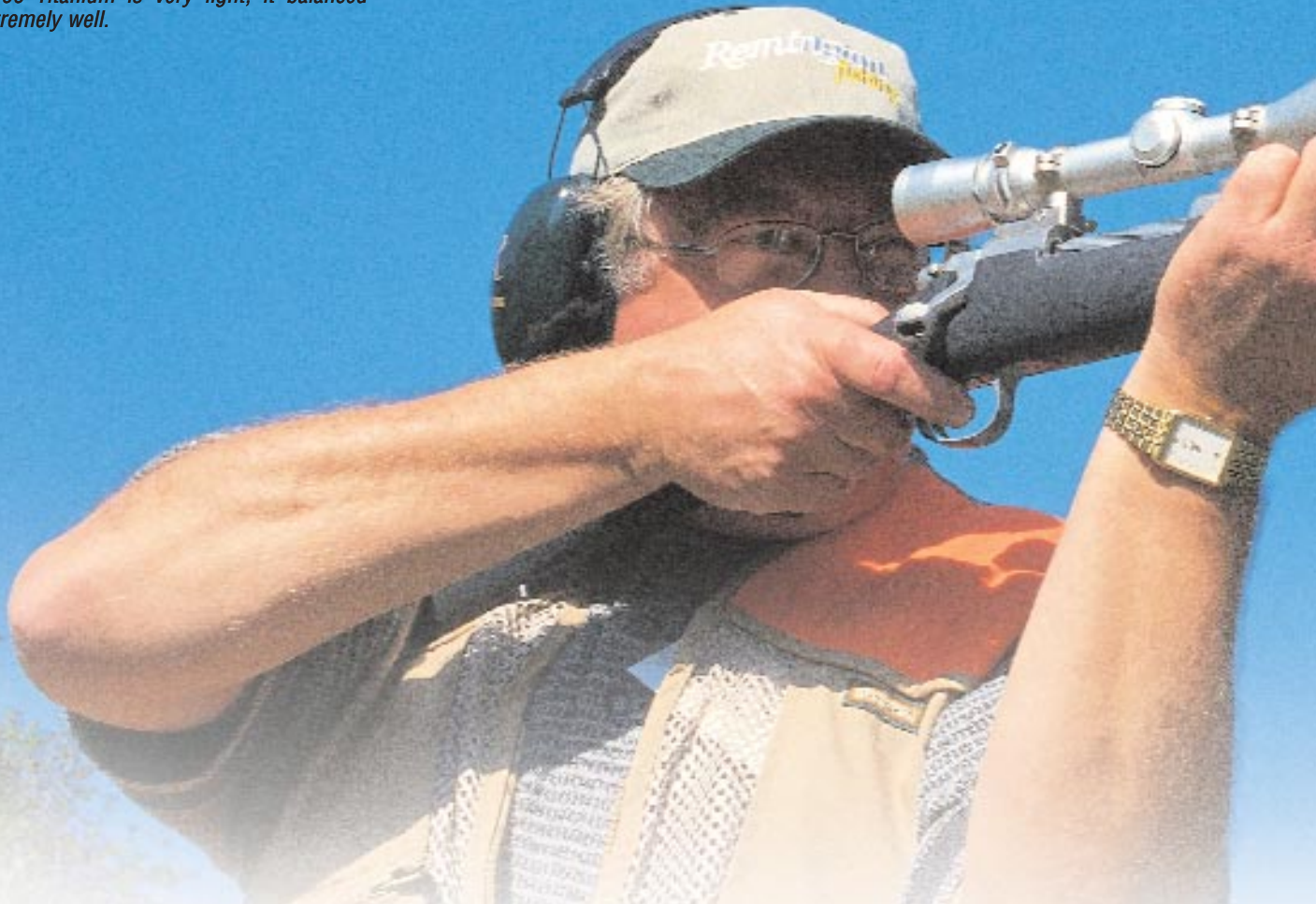


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Anderson found that even though the M700 Titanium is very light, it balanced extremely well.



**T**he Remington M700 Titanium is an impressive rifle. Its basic design is that of the famous Model 700, which is America's most popular bolt-action sporting rifle and boasts a production of well over 4 million units. The key feature of the new model is, of course, the titanium receiver, which helps keep rifle weight down to an amazing 5.5 pounds in the long-action and 5.25 pounds in the short-action. This light weight is achieved in a standard-sized rifle, 42.5 inches overall with the long-action, and a 22-inch barrel. The stock's length-of-pull is 13 $\frac{3}{4}$  inches.

### A Remarkable Material

Titanium has been used in the aircraft and aerospace industries since the 1950s. Initially, the relatively high price of titanium compared to metals such as steel and aluminum

kept its popularity from expanding to other applications. In recent years, the cost of titanium has dropped and the material has been used in a broad range of industrial applications.

Titanium is the fourth most abundant metal in the earth's crust; its density falls between steel and aluminum. Alloys vary, but typically for the same volume, titanium's weight is approximately 2/3 that of steel and approximately 3/5 more than aluminum.

Titanium's strength depends upon how it's alloyed and heat-treated, just as with steel. For example, the steel that is used to make soup cans is certainly not the same as the steel used in tank treads. Commercially, pure titanium has a strength of around 25,000 psi, while a heat treated titanium alloy can have a strength of 200,000 psi, which exceeds most steel alloys. A suitable titanium alloy has the highest strength-to-weight ratio of any readily avail-



*This view shows the fluted bolt body and skeletonized bolt handle.*







# REMINGTON MODEL 700 TITANIUM

By Dave Anderson

**Remington's new space-age rifle offers everything you like about the Model 700 — and less.**

able structural metal.

Titanium has other desirable properties as well: It's highly resistant to corrosion and erosion, and it can be cast, machined, forged, heat-treated and welded. Producers of titanium like to boast that current production comes mainly from countries with stable governments (unlike metals such as nickel and chromium), which leads to stability in both supply and price.

There seems to be an impression with some shooters that all the metal of the M700 Titanium is made from titanium. Actually, only the receiver is titanium. The barrel is stainless steel in a lightweight contour similar to that of the popular Mountain Rifle.

Also, to reduce its weight, the rifle has a blind magazine without floorplate. Otherwise, the action is the time-proven M700 with twin locking lugs, boltface extractor and plunger

ejector. The safety is a two-position safety that doesn't lock the bolt handle. Trigger is the standard M700 adjustable design.

## Getting The Details Right

The list of features doesn't really tell the whole story. Remington has done a terrific job with the M700 Titanium. It didn't just substitute a titanium receiver for a steel one, keep everything else the same, and then bolt the barreled-action in a cheap injection molded stock. Remington got the details right.

The stock, by Bell & Carlson, is a composite of carbon and aramid fiber — trim and lightweight with a well-designed, high straight comb to reduce muzzle jump.

The barreled-action is pillar-bedded in the stock. Remington says the action isn't hand-bedded, but fit of the

*continued on page 63*



*The main difficulty that Anderson experienced with the test rifle was wrestling it back from the hands of admiring riflemen.*



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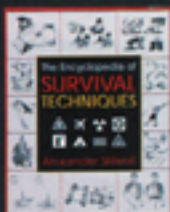
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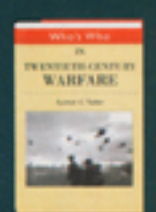
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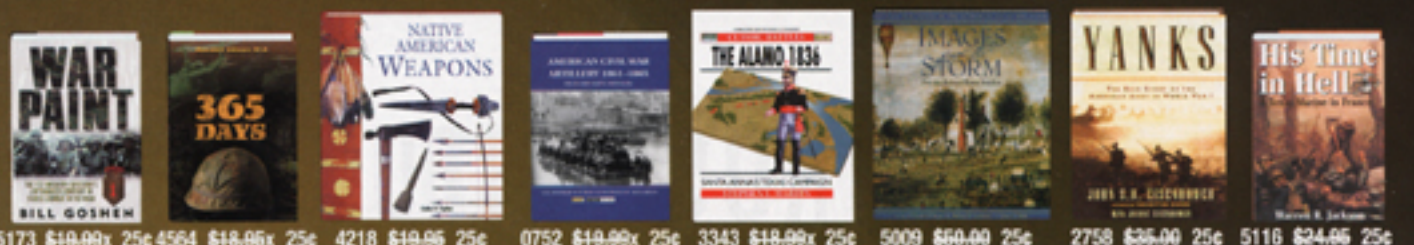


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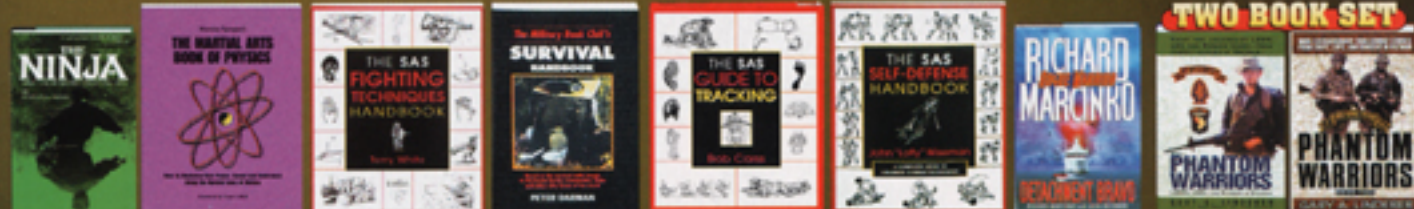
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A close-up photograph of a man in a military uniform aiming an AN-94 assault rifle. The man's face is partially visible on the left, looking through the sights. His hand is on the trigger. The rifle is dark-colored with a curved magazine. The background is blurred, showing some greenery.

# RUSSIA TOUR 2001

## AN-94



# 001: TESTING THE

# NIKONOV



Corrrespondent David Fortier gives us a look at the cutting edge of Russian small arms development.

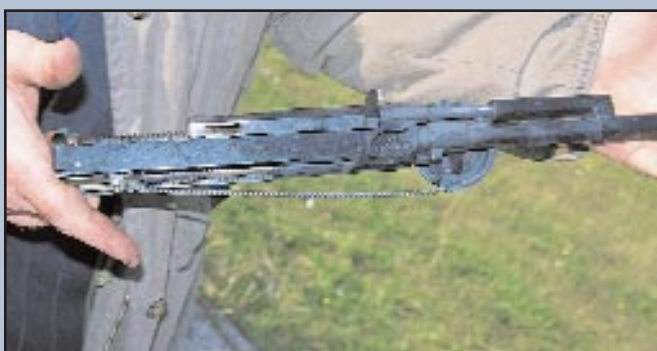
By David M. Fortier

#### AN-94 SPECIFICATIONS

Method of Operation:	Blow Back Shifted Pulse, select fire
Caliber:	5.45x39mm
Length w/ Stock Folded:	28.6"
Extended:	37.1"
Barrel:	15.9", Cold Hammer Forged
Sights:	Chrome Lined
Front:	Post, adjustable for windage and elevation
Rear:	Asterisk Style Diopter, 200-700m
Cyclic Rate:	1800/600 rpm
Feed:	30- and 45-round box mag
Effective Range:	600m

In September of 2001, a three-man team journeyed to Russia and had an inside look at some of the latest and most advanced Russian small arms. The team consisted of Marc Krebs, a nationally known gunsmith, Mark Vorobiev, a Russian native who served his country in Afghanistan as part of a SPETSNAZ unit, and myself. After the September 11th attack on New York and Washington D.C., the United States began waging war in Afghanistan. One country that stands in support of the United States is Russia. It, too, has suffered attacks by terrorists. Additionally, it has had more experience fighting in Afghanistan than any other country.





**Above:** Fortier was allowed to photograph part of the AN-94's disassembly procedure. With the topcover off, you can peer inside and still be baffled as to how it works. Notice the pulley/cable feed system, gas system and buffer assemblies.

From 1979 until 1989, Russia was embroiled in a bitter Afghan war. The combat experience garnered while fighting there not only changed the Russian army's tactics and techniques for waging a modern war, but also helped refine weaponry. While the venerable AK-74M is still in service, its replacement has been adopted and is already issued to SPETSNAZ units. Hard as it may seem to believe, the days of the Kalashnikov in Russian service may well be coming to an end.



## The Challenge

Type-classified by the Russians as the Avtomat Nikonova-94, the AN-94 is a radical departure from what came before it. While rumors of the Nikonov reached the West as far back as 1993, few outside of Russia had seen it. Knowing this, Marc Krebs, Mark Vorobiev and I decided to seek out and testfire this largely unknown Russian rifle. We began our quest by flying into Moscow where our friend Eric Mustafin met us. Mustafin, a nationally ranked Sambo (Russian martial arts) champion, had made all our hotel and travel arrangements, including a flight the next day to Izhevsk.

Located in the Udmurt Republic, Izhevsk is approximately 1,200 kilometers east of Moscow on the European side of the Western Urals. Formerly a closed city, it's the home of Izhmash OJSC, Russia's premiere arms manufacturer. Founded in 1807 during the Napoleonic Wars, this arms plant has played a significant role in the country's defenses. While Izhmash is currently most famous for being the home of Dr. Kalashnikov and his Avtomat, it's also the home of Gennadiy Nikonov and his AN-94.

We flew there on a rickety old ex-Areoflot passenger plane. Touching down, we were greeted by Andrei Vishnyakov, the head of public relations for Izhmash International Trading Center Ltd., and Ahat Khisamutdinov, the personal photographer of Mikhail Kalashnikov.





*Unlike the AK-74M, the AN-94's stock folds to the right of the receiver. This allows the stock to be folded with optics mounted.*

## A Need For Change

The seed for the AN-94 was planted in the 1960s because of the Soviet's dissatisfaction with the basic AKM. While Russia was impressed with the AKM's ruggedness and reliability, it was difficult for conscripts to control on full-auto. Due to this problem, the Soviets desired a lighter, more controllable weapon that fired a small caliber, high-velocity, low-impulse cartridge.

Russia's intention was to field an assault rifle that eliminated recoil through a balanced counter-recoil system. This in conjunction with the new cartridge would yield an assault rifle with dramatically less dispersion, a flatter trajectory, lighter ammunition, and increased effectiveness over anything currently fielded. This bore fruit in the 5.45x39 AL-4, but due to the failing Soviet economy, it was never put into production. Instead, the AK-74 was adopted in its place. While a superb rifle, the AK-74's increased controllability comes simply through the change from 7.62x39 to 5.45x39 and its effective muzzlebrake, not its mechanical design.

The Soviet's desire for a technological leap forward in assault rifles didn't, however, fade away. Realizing that the AK-74 represented the zenith of the Kalashnikov design, the Soviets opened a competition for its replacement. This was code named Abakan and began some time in the late 1970s.

The primary requirement of the new rifle was for it to have a hit ratio 1.5 to 2 times greater than the AK-74. In addition, it needed to have reduced recoil and increased reliability. Anyone who has ever fired an AK-74 knows

*continued on page 70*



**Above:** The rear sight is a simple yet novel design that incorporates settings for 200 and 400-700 meters. **Below:** The muzzle device on the AN-94 is a vast change from the muzzlebrake on the AK-74M.







# KIMBER'S *Delightful Little* VARMINTER

Trim, elegant, accurate and beautifully crafted — the Kimber 84M just may be America's classiest production rifle.

story By Holt Bodinson  
Photos By Ichiro nagata

**K**imber, whose high-quality M1911 designs have graced these pages many times, is back in the centerfire rifle business. The new Model 84M, in both classic sporter and varmint versions, is a remarkable series of rifles that reflects Kimber's commitment of offering the shooting public semi-custom features at production prices. Moreover, the new Kimber rifles exhibit a degree of engineering sophistication that is rarely seen in commercial firearms production.

First out of the box has been the 84M Varmint in .22-250 Rem, followed by the 84M Classic in .243 Win, .260 Rem, 7mm-08 Rem and .308 Win.

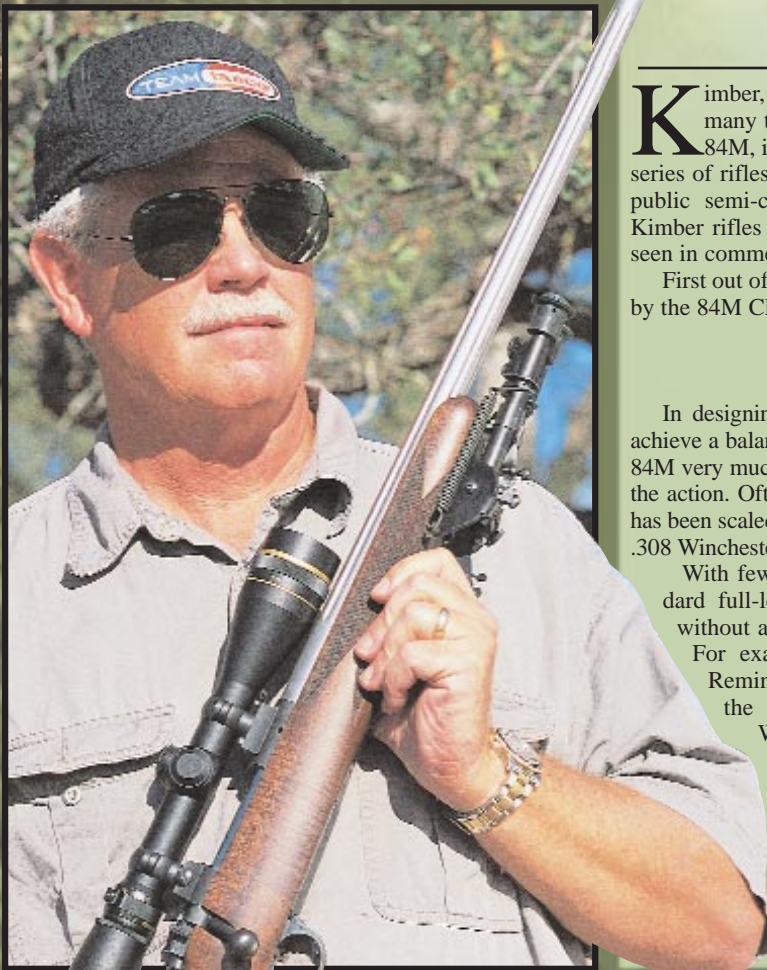
## A True Compact

In designing these new short-action models, Kimber has been able to achieve a balance between action size, power and weight that sets the Model 84M very much apart from the competition. The heart of this achievement is the action. Often called a miniature Model 70, the Kimber centerfire action has been scaled down in diameter, length and weight to match the mid-length .308 Winchester-size case. The result is not your typical "short-action."

With few exceptions, the common short-actions seen today are standard full-length actions that have been chopped in the mid-section without any further reduction in the diameters of the receiver or bolt.

For example, the diameters of the front ring of a short-action Remington M700 or Winchester M70 run about 1.355 inches, while the Kimber measures a trim 1.140 inches. Remington and Winchester bolt diameters are approximately .693 inch, while Kimber's mikes only .585 inch.

By down-sizing the heart of its Model 84M, Kimber has been able to proportion the barrel and stock in relation to the miniature action. The result is an esthetically pleasing, well-balanced and handy rifle. The new 84M models are remarkably light for rifles made of steel and stocked in real Claro walnut. The Model 84M Classic averages 5 pounds, 10 ounces with a 22-inch barrel, while the





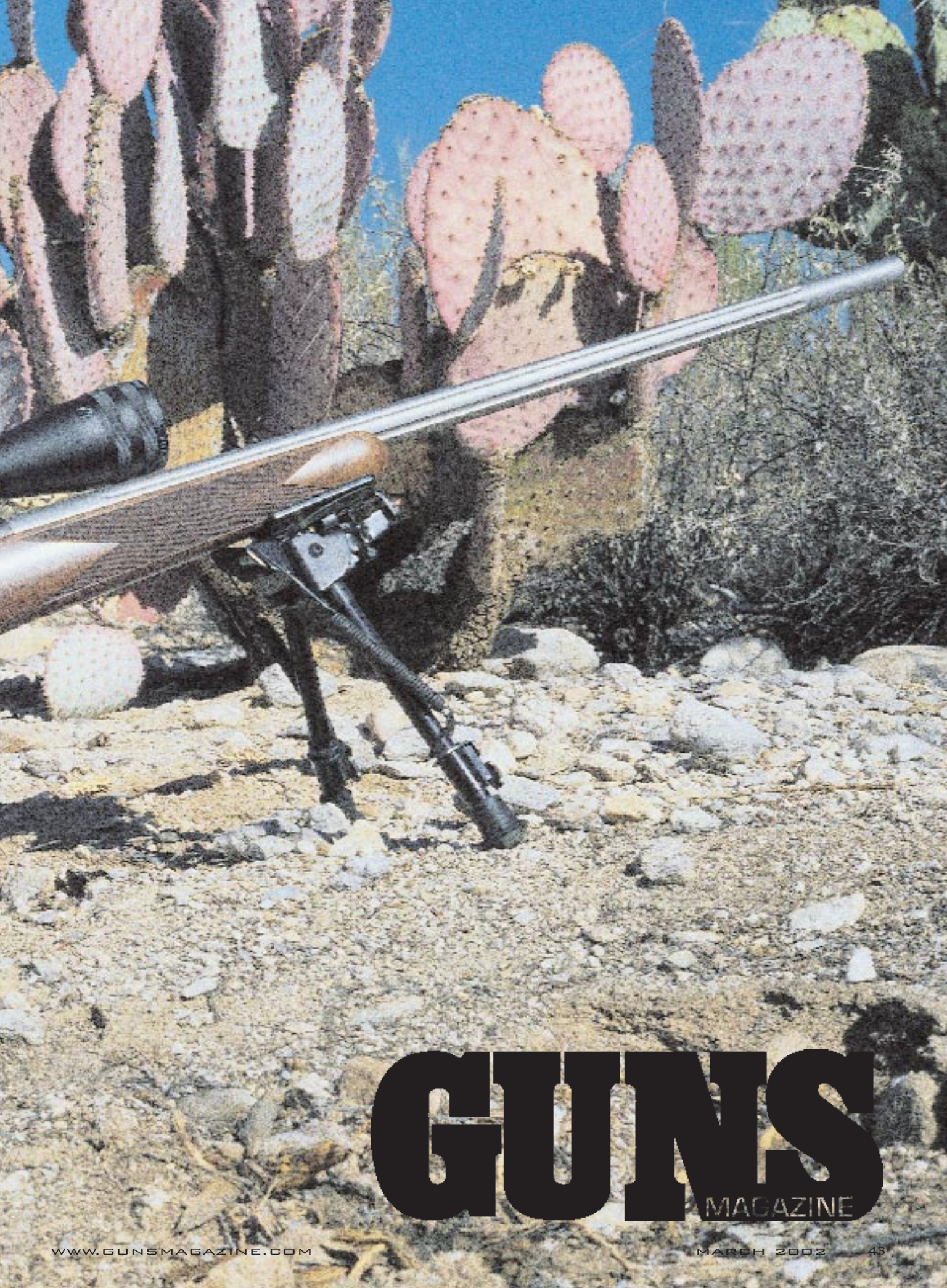




# KIMBER'S *Delightful Little* VARMINTER







# GUNS

MAGAZINE



Varmint model runs 7 pounds, 5 ounces with a fluted, medium-weight 26-inch barrel.

The small, cylindrical Kimber action offers controlled-round feeding, a Mauser-type extractor, a fully adjustable trigger, and a two-position Model 70 type safety on the bolt shroud. Functionally, the action is slick and tight. It shares with the Model 70 its famous cone breech, which facilitates feeding from a five-round box magazine and a positive, blade ejector that works through a slot that is offset in the bolt face from the locking lugs. In fact, the whole Model 84M bolt, including the shape of the bolt handle, looks ever-so-much like a Model 70's. The firing pin is noticeably small and light, resulting in a lock-time that is just short of phenomenal. The bottom metal, featuring a straddle-type floorplate and through-the-triggerguard release, is clean and custom looking. In fact, the overall finish of the metal work approaches custom quality. As a final touch, Kimber offers a set of scope bases that are so perfectly matched to the receiver that they give the svelte action the appearance of a square-bridged Mauser.

### Reach For Your Hiking Boots

There's been a lot of talk about a walkabout varmint rifle. After working with the new Kimber 84M Varmint, I think it comes about as close to the ideal as possible. With a stiff, free floating, fluted, 26-inch stainless-steel barrel that measures .685 inch at the muzzle, the rifle still weighs less than 7½ pounds without a scope. The weight, however, is where it should be when considering a serious long-range varmint rifle — in the barrel. With a weight-forward disposition, the Kimber readily settles down in the hands or when shot off a bipod, while at the same time the rifle is light enough to tote around all day.

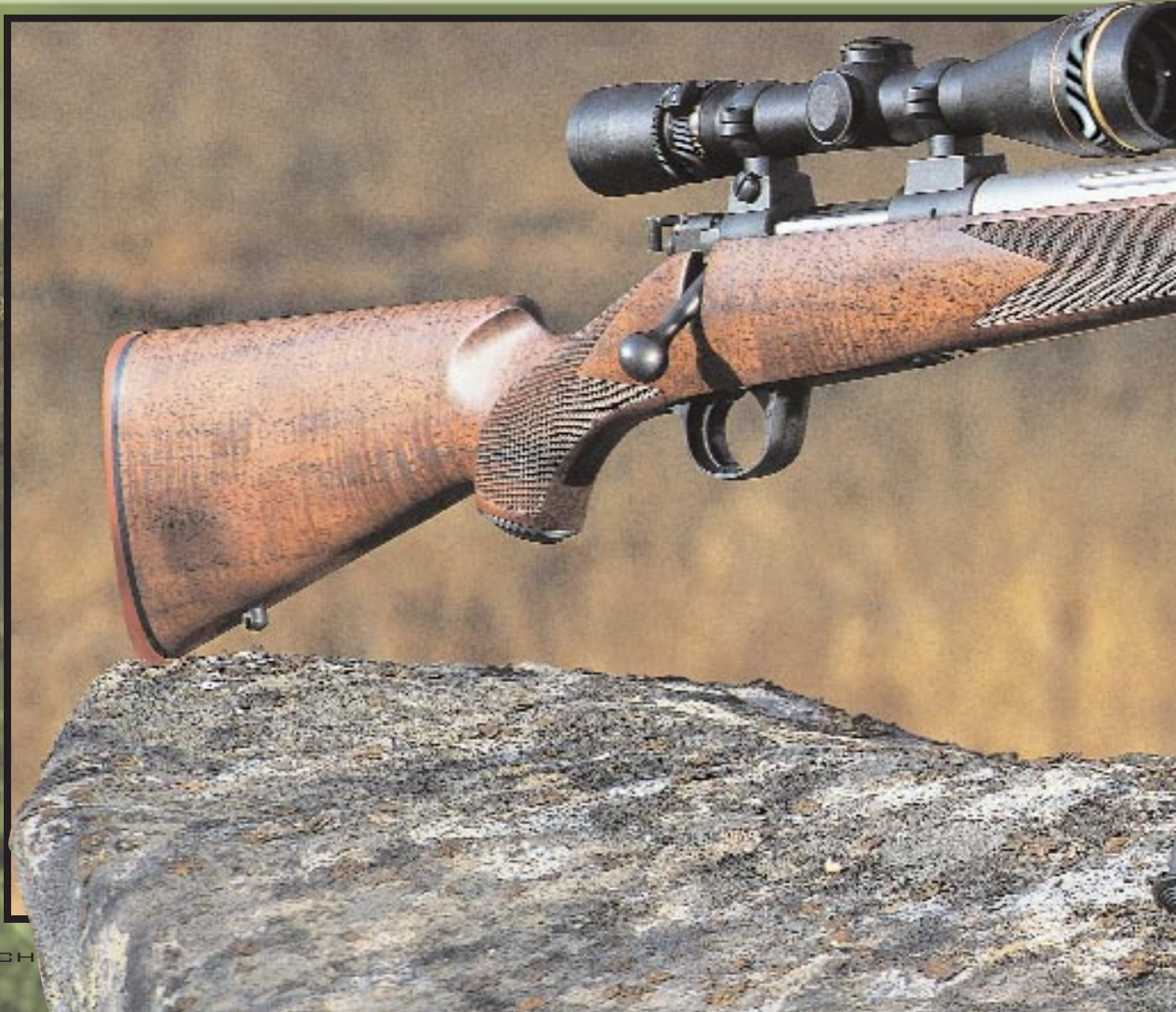
The Claro walnut stock of the Varmint model incorporates classic lines with a full, but not bulky, rounded forearm, handsome grip and forearm panels checkered 20 lines to the inch, a steel grip cap, sling swivel bases, and rubber recoil pad. The action is pillar-bedded with aluminum pillars, and while the test rifle was glass bedded, production models will not be, as Kimber determined through testing that it wasn't necessary.

What proved to be a breath of fresh air was Kimber's fully adjustable trigger that is set by the factory at 2½ to 3 pounds. With the help of Lyman's revolutionary new digital trigger gauge, I adjusted the trigger to 2 pounds with minimum over-travel. At the end of my testing, I re-measured the trigger out of curiosity, and it was spot on. While I wouldn't recommend a 2-pound trigger on a big-game rifle, there's nothing like a crisp, light trigger to improve your shooting on small targets at long ranges.

### Classic Cartridge

Chambering the Varmint model in .22-250 was no mistake. As an all-around, time-tested performer, the .22-250 is blessed with the reputation of being an "inherently accurate" small-game cartridge. Current factory loads range from Winchester's and Hornady's 40-grain pills streaking out at 4,150 fps to Remington's loading of a 60-grain Nosler Partition at 3,500 fps. The Nosler Partition load is rather interesting and indicates that the .22-250 Rem is considered perfectly adequate for deer and antelope in some circles. Because it's easier on barrels, the .223 Rem might be a better choice for those who shoot 200 to 500 rounds a day after prairie dogs. But for chucks, foxes, coyotes and small-game at extended ranges, the .22-250 simply shines.

*continued on page 46*





*The bright 3-9x42 Illuminator lived up to its name when picking out distant detail in the early morning twilight.*



*The widescreen eyepiece of the Illuminator requires a bolt handle with ample clearance.*

# REDFIELD IS BACK

By Holt Bodinson

An established name in sports optics and now part of the Blount group, Redfield is back in the game with a passion. In the '70s, I hunted with Redfield's Widefield 1.75-5X and 2-7X "TV screen" variables and shot long-range big-bore with its innovative model 6400 target scope. Optics were crisp, and adjustments were precise and problem free. Redfield had a fine product line, and while quality slipped at the end of the original era, quality is the focus of the new Redfield company.

Redfield is introducing four lines of riflescopes:

The Illuminator, available in 3-9x42 and 3-10x50 in a variety of finishes is its top-of-the-line premium series.

The Golden Five Star is a mid-priced line consisting of

3-9x40, 3-9x50, 4-12x40, 6-18x40 scopes, again in a variety of finishes.

The economy scope line is labeled Tracker and is available in 3-9x40, 3-9x50, 4-12x44 and 4-16x44 in black matt finish only.

Then there is the return of the Widefield specialty line in 3-9x27, 2-7x22, and 4x22 in gloss or matt black. Designed for hunting timber and brushy terrain, these scopes offer exceptionally wide fields of view and low profile lens bells, permitting the scopes to be mounted low on the receiver where they belong.

The Illuminator, Golden Five Star and Widefield lines

*continued on page 46*





## REDFIELD IS BACK

*continued from page 45*

share a number of similar mechanical features. The aluminum tubes are one-piece construction. Windage and elevation knobs are finger-adjustable in 1/4 MOA clicks. Lenses are fully multi-coated. The reticles are of a duplex design. The company states that the scopes are waterproof, fog-proof and shockproof, and they carry a lifetime warranty for the original purchaser.

The economy priced Tracker scopes, on the other hand, feature a two-piece tube, no warranty as to their waterproof, fog-proof or shockproof qualities, and the lenses are simply coated, not multi-coated. In optics, you usually get what you pay for.

I recently had the opportunity to work with the 3-9x40 Illuminator and the 6-18x40 Golden Five Star. Representing two price ranges, and presumably two qualities of lenses and internal components, the scopes were interesting to compare at comparable power settings.

The 6-18x40 Golden Five Star is a pure and simple, high-powered target/varmint scope, and it was mounted on the Kimber Varmint .22-250 Rem I was testing. Measuring 13 inches in length and weighing 16.3 ounces, it has an adjustable objective scaled in yards and meters from 50 yd/m to infinity. When working with most AOs, I find that the AO index lines and reality rarely meet, so it's best to focus in on meas-

ured distances and record the results for future reference. Both the power ring and the AO adjustments were smooth with just sufficient friction. When wringing out Kimber's .22-250, I found that the 1/4 MOA adjustments were precise and repeatable.

The 3-9x42 Illuminator features a wide-view eyepiece, measures 12.6 inches long, and weighs 14.9 ounces. The 3-9X scope continues to be the best selling model on the market. Given its broad range of usable powers, it is all the scope anyone needs for big game and, in fact, most small game. The elevation/windage turret of the Illuminator is located in the middle of the tube, facilitating fore-and-aft mounting adjustments when I placed it on a very accurate Model 70 in .243 Win. As a point-of-interest, the width of the TV screen-type eyepiece of the Illuminator requires a bolt handle with generous clearance. Some military bolt handle conversions might prove troublesome. Also, when focusing the widescreen eyepiece, it's important that it be locked in a position that is square with the rest of the tube. The '70s Widefields, featuring the same type of eyepiece, actually had an "V" notch index in the locking ring that forced you to square up the eyepiece.

Having the opportunity to compare the optics of two scope models from the same maker in different price ranges was a real treat. Before the sun rose, I sandbagged both scopes and studied the details of a cacti covered hillside 200 yards away. At both 6X and

9X, I could see no difference in the light-gathering or definition qualities of the two models, which speaks exceedingly well for Redfield's lenses and coating technology. In fact, the light-gathering ability of both scopes was remarkable in the early morning twilight condition that is often the finest hour of the day to spot game animals.

Color rendition of both models was excellent, with the Illuminator lens yielding a slightly warmer tone.

While the widescreen eyepiece of the Illuminator provided a bit wider field of view than the round eyepiece of the Gold Star, what you gain in image width, you lose in image height. All things considered, image width is probably more useful in a hunting scope than image height.

Both the Illuminator and the Golden Five Star are representative of the renewal of a famous optics line. Given the quality and performance of these two models, Redfield is off to a good start.



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## KIMBER'S VARMINTEER

*continued from page 44*

Additionally, if you're a handloader, the .22-250 is easy to work with. It favors medium-burning powders such as IMR 4895, 4320, 4064; RL-15; H380 and Varget and bullets in the 50- to 55-grain range. A standard load for years was a 52- and 53-grain HP bullet loaded over 35.0 to 36.0 grains of IMR 4320; 34.0 to 35.0 grains of IMR 4064; or 34.0 to 35.0 grains of IMR 4895. By all means, try 50-grain bullets as well. They've tended to be exceedingly accurate in many .22-250s.

When the Kimber Varmint arrived, I had just received two samples of Redfield's revived scope line — a Golden Five Star 6-18x40 AO and an Illuminator 3-9x42 (See sidebar story).

The 6-18x40 AO Five Star was a perfect match for Kimber's .22-250. It offered an exceedingly useful range of powers and clear, crisp optics while the adjustable objective feature kept parallax problems in check at all ranges. Now under Blount ownership and management, Redfield is once again producing quality optical instruments.

### Putting It To The Test

In the field, the Kimber Varmint lived up to its good looks. On hand was a favorite handload consisting of 35.3 grains of IMR 4895, the Federal 210 primer coupled with

a 53-grain Sierra Match bullet and Winchester's 55-grain Super-X factory load. As I often experience today, the factory ammunition outshot my standard handload. The Winchester load clocked 3,778 fps over the Pact Professional chronograph and turned in three-shot groups of 5/16 inch at 100 yards and 1 1/8 inch at 200 yards. The favored handload registered 3,752 fps with respective groups of 9/16 inch and 1 3/8 inch. I might add that the particular rifle I tested had already been abused on two promotional prairie dog hunts and exhibited visible throat erosion. Kimber is making its own quality barrels, and I expect it would be fairly easy to develop a high-performance load that would average 1/4 MOA or better in the Varmint model.

When considering its miniature action, subdued good looks, proportions and performance, the Kimber Varmint model is truly a customized rifle and a lot of gun for the money. It carries a retail tag of \$978.

Having worked with the Varmint model, I look forward with anticipation to the new Kimber Classic Sporter chambered in a big-game caliber.



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# SMACKING STEEL WITH THE .414

Silhouette shooting is an extreme test of handgun accuracy and power, but the .414 Dan Wesson is up to the challenge.

By Todd Spotti

**H**andgun silhouette is certainly one of the most demanding challenges in long-range shooting. You face 40 steel targets, which consist of 10 chickens placed at 50 meters, 10 pigs at 100 meters, 10 turkeys at 150 meters, and 10 rams at 200 meters. Each stage of the match consists of two relays in which the shooter has 2 minutes to shoot five animals. One point is awarded for each animal hit and knocked over. If you hit an animal and it doesn't fall down, too bad. No point is scored.

Shooters compete in different classes based on their skill level. This is a good system: Novice shooters only compete against other novices and experts only compete against other experts. There are also different categories of compe-

tition that vary by the type of handgun used. (The revolver class is definitely one of the most difficult.)

## Vital Requirements

Handgun silhouette shooters need only two simple things from their revolvers: brute force power, and the elegance of minute-of-angle accuracy. The Dan Wesson .414 SuperMag has plenty of both.

Let's talk about power first. As previously mentioned, in order to score points during a IHMSA silhouette match, the steel targets have to be hit and completely knocked off their stands. The ram is definitely the most difficult target



*Dan Wesson .414 Super Mag shown with two barrels. Besides offering versatility, the unique barrel mounting system improves accuracy.*





*This 50-yard group was made with the Leadhead commercial cast bullets.*

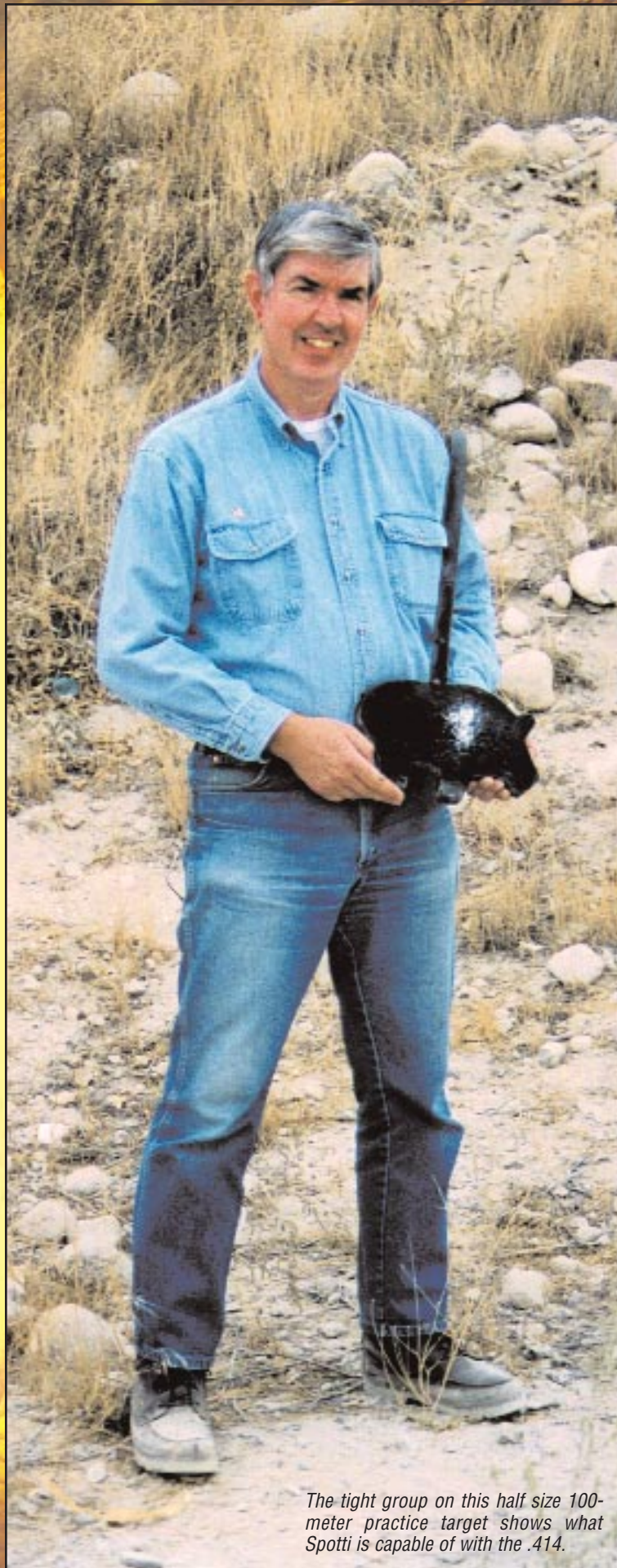
in this respect because of its weight and its distance from the firing line.

A standard T-1 steel ram target will normally weigh between 50 and 55 pounds. Consequently, it has to hit square and *hard* to kick the target over. This is definitely no job for a 9 mm.

The ram is also located 200 meters away from the firing line. Think about this a little bit: 200 meters equals 217 yards. That's more than the length of two foot ball fields laid out end to end — a heck of a long shot with any gun, not to mention a revolver. When fired over that distance, the normal .357 Magnum bullet will have lost nearly 25 percent of its velocity and energy. Even the impressive .44 magnum will have lost approximately 27 percent. Consequently, when dealing with the combination of the weight and distance of the target, the serious handgun silhouette shooter must look for every available power advantage in order to reliably take down a ram.

OK, having the power to knock down all the targets was just the beginning. Now we have to worry about the accuracy portion of the formula. The steel animals are roughly life-size, which makes handgun silhouette competition a natural introduction to handgun hunting. However, the biggest difference between the two sports is again the distance at which the targets are placed, i.e., 50, 100, 150 and 200 meters. Only the very best revolvers will have the mechanical accuracy to reliably hit the regular steel animals at those distances. Then there are the shoot-off targets. Now it really gets interesting.

If there is a tie score, the winner is decided after an even more difficult round. Now the accuracy part of the equation *really* comes into play. For tie breaker targets, many clubs often use the steel chickens, which are usually shot from 50 meters, out at 200 meters. These targets only measure approximately 6 inches by 8 inches. When placed way out



*The tight group on this half size 100-meter practice target shows what Spotti is capable of with the .414.*

#### 100-YARD DATA

POWDER	BULLET	PRIMER	VELOCITY	GROUP
27.0 WW296	210 Sierra	Win	1503	1.75
27.8 WW296	210 Hornady	Win	1465	2.10
26.5 H110	210 Hornady	Win	1609	1.55
24.3 Lil' Gun	210 Nosler	Win	1536	1.65
25.2 Lil' Gun	210 Hornady	Win	1593	1.88
26.5 Lil' Gun	210 Nosler	Win	1650	1.51
23.0 H4227	220 SAECO	Win	1506	1.78
25.0 H4227	220 SAECO	Win	1593	3.00
25.5 H4227	220 SAECO	Win	1618	2.11
25.2 H4227	245 LH Cast	CCI	1545	2.00
23.0 AA5744	270 LH Cast	CCI	1202	2.25
24.2 AA5744	270 LH Cast	CCI	1346	2.21
24.5 N110	210 Sierra	Win	1625	1.89



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at the ram line, they appear to be nothing more than little black blobs.

Other silhouette clubs like to increase the level of difficulty even more by using half size silhouette targets for shoot-offs. In those cases, the chicken targets measure slightly over 3x3 inches. Exceptional accuracy is clearly required to hit such a minuscule target at such a long distance.

Not long after handgun silhouette was established as a sport, shooters realized that many of the conventional revolvers and the cartridges of the time were somewhat lacking under these new more stringent requirements. In order to provide the extra margin of power and accuracy needed in silhouette competition, many shooters felt a special type of revolver cartridge was needed. This led to the development of the SuperMag series.

### More Power Is Possible

The basic concept was conceived by Elgin Gates, the noted big-game hunter and champion racing boat driver. It was both simple and complex at the same time. Most magnum revolver cases are approximately 1.285 inches in length. Gates found that by lengthening cases to 1.6 inches, enough additional powder could be added to substantially boost pressures and velocities well over standard magnum cartridges. In fact, given a revolver of sufficient strength, the additional powder capacity permits loading to rifle-like pressures. In effect, Gates created a totally new class of cartridge — the Super Magnum.

As mentioned before, a typical magnum case is approximately 1.285 inches in length. It typically develops around 36,000 psi pressure. On the other hand, the 1.6-inch SuperMag case was found to develop pressures around 50,000 psi, which, by the way, is the average working pressure of the 30-'06 rifle cartridge. In other words, a 19-percent increase in volume was yielding a 28-percent gain in performance. In practical terms, this boost in pressure easily provides 200 to 300 fps more velocity to the SuperMag revolver shooter. Whether shooting steel rams in a silhouette match or Russian boar in the Carolinas, the extra power of the SuperMag is good medicine.

To handle the extra performance, the Dan Wesson company designed and built its famed SuperMag series of revolvers. They're currently offered in .357 SuperMag, .414 SuperMag, and .445 SuperMag. These are large, exceptionally strong guns, but just as importantly, they're exceptionally accurate as well.

### Built To Be Better

The excellent accuracy comes from three aspects of the gun's design. The first is it's size and strength. The Wesson .414, equipped with an 8-inch barrel, measures 14 inches in length and weighs in at a substantial 72 ounces. This extra mass means the gun has an

extra margin of mechanical stiffness. More stiffness equates to less shake and vibration during firing, and that means more accuracy.

The second design feature that contributes to the Wesson's accuracy is the cylinder locking system. Most revolvers latch at the rear of the cylinder, which is the end farthest away from the critical barrel/cylinder gap. The Wesson system features a heavy latch at the front of the cylinder. This is the optimum location. The heavy latch securely fastens the front of the cylinder yoke (the most flexible part of any double-action revolver) to the massive frame and thus works to prevent movement between the cylinder and the frame during firing. This ensures that the critical alignment between chamber and barrel is preserved while the bullet is passing between one and the other.

Wesson also takes special care to make sure that the cylinder locking bolt precisely fits the locking notches cut around the circumference of the cylinder. Just as importantly, the locking bolt is also an exact fit with the bolt window cut in the bottom of the frame. Doing so ensures there is minimal side-to-side play of the bolt that can be transferred to the cylinder. The end result of all this care is very likely the best cylinder lockup you'll find on any double-action revolver.

The third part of the equation is Dan Wesson's unique tensioned barrel system. The barrel is hand-screwed into the frame. The factory sets the barrel/cylinder gap at the industry standard of .006 inch. However, since the barrel is not locked in place like on a conventional revolver, the individual shooter is free to adjust barrel/cylinder gap to the absolute minimum in order to increase velocity. A wider gap allows more of the propellant gases to escape out to the side. A smaller gap doesn't. Consequently, I set mine at a mere .001 inch.

As an aside, I should note that the Wesson's cylinder is so perfectly aligned with the barrel that even with this tiny barrel/cylinder gap, there is no danger of cylinder drag. On many other brands of revolvers, the face of the cylinder will wobble back and forth side to side when the cylinder is rotated. If the barrel/cylinder gap is too small, the face of the cylinder will drag against the barrel. This doesn't happen with the Wesson.

Once the gap is set, a heavy barrel shroud is slid over the barrel and then fastened with a nut at the muzzle end. By tightening the nut at the muzzle, the barrel is now drawn away from the frame and is placed under an impressive amount of horizontal tension — just like when musicians turn a key and tighten a string on their violin. Doing so results in the total elimination of barrel whip and in significantly smaller barrel oscillations when the gun is fired. Oscillations are reduced even further by the fact that the barrel is supported at both ends, i.e., in the frame and by the muzzle end of the shroud. All other revolver barrels are supported only by the frame. Reduced barrel vibration translates into superior accuracy.



## Cartridge Selection

So why did I choose a .414 Super Mag? Because a .41-caliber bullet of equal weight can do anything a .44 can and do it better. First of all, we have to recognize that .44 Mag bullets aren't really .44-caliber. The standard ".44" actually measures only .429 inch in diameter. That means that the ".44" isn't even a .43-caliber. On the other hand, the .41 Mag bullet is a true .41, measuring exactly .410 inch. This also means that a .41-caliber bullet of equal weight has a slightly better ballistic coefficient or ability to slip through the air. Result? More power delivered on the target down range.

For those who prefer to let someone else do their loading, ammunition for the .414 is available from the Dan Wesson company. Both 170-grain and a 220-grain loads are offered. Dan Wesson is also working on a new line of premium hunting ammo for the .414 that will feature 240-, 265-, and 300-grain slugs featuring a very interesting mechanism to ensure bullet expansion. However, handgun silhouette is a reloader's sport.

Reloading for the .414 is pretty much a straight-forward affair. Cases for .414 are readily available from Starline, and .414 dies are offered by Redding. Regular .41 Mag dies can be used in a pinch; however, the Redding dies do a great job with a minimum amount of fuss and adjustment.

Only two extra considerations have to be taken into account when reloading for any of the SuperMag series. The first is that rifle primers should be used rather than pistol primers. Since we're working with a extra long straight column of magnum ball powder, the hotter, longer burn time provided by rifle primers is necessary to provide the best ignition. Magnum pistol primers just don't have enough spark to do the best job, and they're not really made for the kinds of pressures we're developing with the .414.

The second consideration concerns recoil. When loaded to the absolute max, the .414 can create significant recoil. After all, this is a cartridge that has 16 percent more case capacity than the mighty .44 Magnum and is considerably more powerful. When loaded at the top end, we want to make sure that we're using a heavy roll crimp to ensure the bullets in the other chambers don't start moving out of their cases as the gun recoils. For those wishing an extra margin of holding power, the Redding profile crimp die is just the ticket as it combines a conventional roll crimp with a taper crimp.

For powders, the standard ball types such as H110, WW296, AA #9 work very well. Vihtavuori's N110 is the fastest burning of the bunch and so naturally produced the best velocity of all and as an added bonus accuracy was among the best. Hodgdon's Lil' Gun, which has a burning rate slightly slower than H110 was an exceptional performer and seems to be a natural for extra-large cartridges. Hodgdon's H4227 probably has the most flexibility and can produce good groups over a wide range of velocities. In fact, if I

had only one powder to choose from, H4227 would probably be the one.

The range of .41-caliber bullets from the manufacturers is admittedly not very robust. Sierra has the best selection with 170-, 210- and 220-grain bullets. Nosler and Hornady offer only a single 210-grain bullet each, and Speer provides 210- and 220-grain half jacket bullets that are really more suited for close range self-defense purposes.

For those who like pouring their own, Redding SAECO has the widest variety of .41-caliber cast bullet molds available, including its No. .415 which is a beautiful 220-grain gas-check design. SAECO molds are simply the best you can buy.

If you like the economy of bullet casting but don't have the time for it, Leadhead's Bullets in St. John, Kansas is the place to go. It offers both a 245- and 270-grain gas-check design. These are very impressive and extremely well-cast. I've used these bullets extensively, and they have carved out a large and loyal following among silhouette shooters. Cast out of lead that measures 20+ on the Brinell hardness scale, these heavy hitters are exceptionally accurate. Prices are also very reasonable. The 245-grain design is perfect for silhouette or white tail deer, and the 270-grain has a wide appeal to those who like spanking the rams with lots of extra authority. The 270s are also very effective bullets for those who like hunting boar with a handgun and like the superior penetration of a heavyweight bullet.

So what do you get when you combine a well-proven yet innovative design with the new generation quality that comes from modern CNC machinery and attention to detail? What is probably the best double-action revolver on the planet. When coupled with the very powerful .414 SuperMag cartridge, you have a tough combination that relegates the ordinary .44 Mag revolver to the second string. Here's a team that will flatten steel with all the authority you could wish for and which will also allow the handgun hunter take game at longer distances without any fear of running out of performance.

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# Match Rifle Ammo

*Is factory match-grade ammunition really worth it? Petty puts it to the test.*

**By Charles E. Petty**

I'm sure you've seen ammunition on the dealer's shelf with the words "match grade" prominently displayed on the label. As shooters, we assume that the ammo in this box is going to be better than one not making the same match-grade claim. And this is almost always true.

But it's hard for consumers to tell by looking whether the ammo really is special. We have to trust the manufacturers, and in fact they go to considerable lengths to make sure that their product really *is* better. But because there is no universal match-grade standard, each manufacturer must develop its own criteria.

The fact that we can buy match-grade ammo at all is really pretty amazing. Manufacturers can't resort to many of the practices that you or I as handloaders would

use to build better ammo for a particular rifle. For example, they need to ensure that their ammo will fit *any* gun out there. This deprives them of the opportunity to do any tricky stuff such as seating the bullets out further, or maybe making neck dimensions tighter.

So what is involved in making match-grade ammo? The short answer is that manufacturers simply take more pains doing the same things they do for standard ammo. In general terms, the loading rate is surely slowed down, and tooling (such as seating dies) will be selected to meet tighter tolerances. But the components are the biggest factor.

## Primers

Match, or benchrest primers, really do contribute to the accuracy of match ammunition; however, they're not functionally different than conventional primers. There is no



secret match primer mix. Rather, it's a matter of operator skill. Primer manufacturing is very labor-intensive. In manufacture, a stainless-steel plate with hundreds of little holes forms the primer mix into the pellets that go into the primer cup. This process is done by an operator, known as a "charger." The charger has a little ball of wet primer mix and, using a rubber squeegee, spreads the mix to fill each hole. Quality-control checks identify which chargers make the most consistent pellets. These chargers are then chosen to make match primers.

The metal parts (the cups and anvils) are the same as those used in forming standard primers, although these parts may be selected from tooling that produces more consistent dimensions. But there aren't any special "hard" or "soft" primers.

## Cartridge Brass

Is there such a thing as match-grade brass? The answer: yes, no or maybe. It depends upon whom you ask. There aren't any special materials. Depending upon how the company makes brass, it might be possible to identify a set of tooling that makes cases which are just a bit better than another set. And it would certainly be possible, and practical, to earmark those cases for match ammo. One of the secrets to good ammo is to have brass that has a very consistent capacity.

Benchrest shooters weigh each case and

### MATCH AMMO TEST

#### .223 Remington

BLACK HILLS		Velocity	1	2	3	4	5	Avg.
52 gr. HP		3196	0.511	0.523	0.231	0.657	0.643	0.513
68 gr. HP		2880	0.425	0.557	0.753	0.488	0.369	0.518
73 gr. HP		2643	0.830	0.576	0.493	0.206	0.445	0.510
75 gr. HP		2811	0.938	1.076	0.887	0.925	1.474	1.060
FEDERAL								
68 gr. BTHP		2787	0.404	0.512	0.441	0.473	0.504	0.467
HORNADY								
68 gr. A-max		2696	0.443	0.348	0.171	0.409	0.474	0.369
WINCHESTER								
69 gr. HP		.2881	0.552	0.642	0.419	0.465	0.693	0.554

**AVERAGE 0.570**

#### .308 Winchester

BLACK HILLS		Velocity	1	2	3	4	5	Avg.
168 gr. JHP		2674	0.527	0.429	0.552	0.521	0.495	0.505
175 gr. JHP		2661	0.888	0.701	0.753	0.974	0.909	0.845
FEDERAL								
168 gr. JHP		2693	0.627	0.366	0.716	0.458	0.536	0.541
175 gr. JHP		2604	0.668	0.486	0.497	0.472	0.074	0.439
180 gr. JHP		2629	1.182	0.87	0.673	1.193	0.785	0.941
HORNADY								
168 gr. JHP		2671	0.191	0.488	0.648	0.53	0.409	0.453
168 gr. A-max		2676	0.502	0.616	0.572	0.678	0.57	0.588
REMINGTON								
168 gr. Jhp		2640	0.605	0.55	0.608	0.509	0.631	0.581
WINCHESTER								
168 gr. Nosler HPBT		2714	0.318	0.353	0.592	0.501	0.538	0.460

**AVERAGE 0.595**

#### .300 Winchester Magnum

BLACK HILLS		Velocity	1	2	3	4	5	Avg.
190 gr. JHP		3076	0.267	0.171	0.423	0.231	0.469	0.312





*Petty's Remington 700P-LTR in .223 has become one of his favorites.*

select a batch to use that only varies in weight about a tenth of a grain or so. That may be helpful, but modern process control methods in the factories have done a lot to eliminate many of the variables that might possibly be harmful to accuracy. Statistical process control techniques are used to hold products within some pretty tight tolerances. Today's brass is very good, but it's also possible to exercise more precise control over manufacture or make small adjustments in dimensions. It would be very costly to manufacture separate match-grade brass, and companies would have to realize very significant improvements over standard cases before it would be attractive to consumers.

## Bullets

Once upon a time, the secret to making good match rifle ammo was to buy Sierra bullets. And for a long time that *was* a secret, but today you'll find the name right on the label. Sierra's 168-grain Match King .308 bullet has been the defacto standard for accurate .308 and .30-'06 ammo for decades, and today it's still superb stuff. But now Nosler and Hornady have products that compete head-on: Hornady's A-Max in both .30 and .22 have proven to be exceptionally accurate, and Nosler's new competition J4 168-grain .30 is loaded in the new Winchester Supreme Match ammo. Hornady's standard 168-grain BTHP is no slouch either.

## The Plan

It seems as if there has been a resurging interest in match ammo. There was a time when Federal simply *owned* that market. That is no longer the case, and Federal has some formidable competition from Remington, Winchester, and a little upstart outfit called Black Hills Ammunition. As a bullseye shooter, I'm a longtime consumer of match-grade ammunition and have come to appreciate how difficult it is to produce really good ammo.

By far, the majority of match rifle ammo consumed is in .223 Remington and .308 Winchester, with some long-range work being done with the .300 Winchester Magnum. Federal also has match ammo in 6.5x55 Swedish Mauser and .30-'06 Springfield, but I am not equipped to test either of those. What I did do was test a good cross section of available ammo that is identified as match-grade. While I didn't test every possible load, I did test quite a few.

The test rifles I used were two Remington 700Ps and a custom Remington 700 long-range varmint rifle in .300 Winchester Magnum that belongs to my buddy Bob Maddox. The .223 was a 700P-LTR with a 20-inch, fluted, 1:9-twist barrel. The .308 was a 700-P DM with a 26-inch, 1:10 barrel. Both were equipped with Bausch & Lomb 6x24 scopes. Both the

700Ps had also had an accuracy tuneup that involved glass bedding and crowning the barrel. I have a long history with these rifles, and I know what level of accuracy they are capable of.

The shooting test was designed to give as much information as possible without turning it into a "life's work" sort of deal. In some cases, ammo was also limited, so the plan involved starting with a clean, cold rifle. Two fouling shots were fired followed by five, three-shot groups at 100 yards from a Ransom benchrest. The rifle was cooled and then the remaining five rounds in the box were chronographed. The rifle was then thoroughly cleaned and cooled before the next load was fired. With two rifles to work with, Bob Maddox and I were able to share chronographing and cleaning chores to keep things moving. Even so, it took 2 long days of shooting to get the data you see here. Yes, I know, it's a tough job, but someone has to do it.

## .223 Remington Match Ammo

In the realm of competitive shooting, the .223 Remington (5.56 NATO) has undergone a mild revolution. In its early life, only bullets lighter than 55-grain were used. But over the years, they've gotten heavier and now range from 68- to 77-grain. With the heavier bullets, the accurate range of the .223 has been greatly extended. Early on, the

*continued on page 55*





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(from left to right) Dick Metcalf, Tom Gresham, Jim Zumbo, Wayne Fears, David Foster, David Petzal, and (seated) Jim Carmichel.

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## MATCH RIFLE AMMO

continued from page 53

accurate range of the cartridge was considered to be not much over 300 yards. It's now common for target shooters to use the M-16 service rifle out to 600 and even 1,000 yards.

The heavier bullet necessitated a change in rifling twist. The original 1:12-twist will not stabilize the heavier bullets. A couple of years ago, Remington changed to a 1:9 for the 700P, and rates as fast as 1:7 are used in some guns. Those rates are much too fast for the lighter bullets, and sometimes they will disintegrate on the way to the target. In the test rifle, the 1:9 seemed to be a great compromise, although it didn't seem to like the 75-grain. I was surprised at the consistent accuracy of all the tested ammo. And, excluding the 75-grain, the average of the other six loads was a very impressive .489 inch.

### .308 Winchester Match Ammo

For the last 40 years or so, .308 Winchester has been virtually the standard caliber for target and tactical rifles. This popularity has brought advances in match ammo that might have come slower otherwise. This is especially true in tactical rifles such as my Remington because law-enforcement agencies of all sizes now usually have a designated marksman (the word "sniper" is not PC anymore). Civilian shooters like it as well.

Once more, the overall consistency is quite remarkable. Some of this surely must be attributable to the rifles, but the ammo has come a long way, too. Quite a few years ago I devoted a lot of time coming up with a handload that shot as well as Federal's match load. I could equal it, but I couldn't beat it. The results from this test tell me that there's not a whole lot of reason to handload the relatively small quantities of .308 that I shoot.

### .300 Winchester Magnum

The .300 Win. Mag. has some popularity among tactical units that specialize in long-range work, and this caliber has a following with 1,000-yard shooters, too. Maddox's rifle is an example of top-end custom work. The accuracy shows that, but the ammo is quite remarkable as well. Federal also has a match-grade load for the .300WM, which I was unable to test.

### Conclusions

Should the average shooter spend the extra money to buy match-grade ammo? That really depends on what your purpose is. For casual recreational shooting, it may not be needed, but the bottom line is that today's match-grade ammunition really does perform splendidly. If you'd like to find out how well your rifle can shoot, this is the way to do it.



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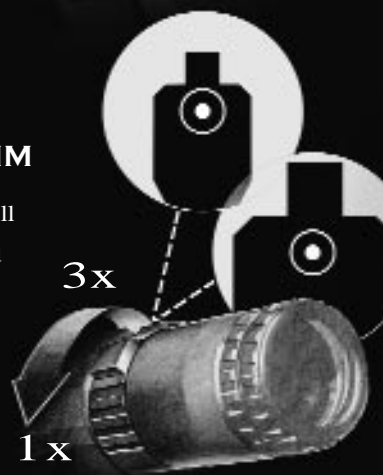
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# Here's some good information to help you make an informed decision when selecting this important sportsman's tool.

By Jacob Gottfredson

**A**s consumers, we are pummeled with so many products that it's a wonder we buy anything at all. And what we do end up buying might be obsolete by the time the door closes behind us. This is bad enough, but sometimes we aren't even able to see the product before we can buy it, which is especially true for high-end sporting optics for hunting. For example, how many of you have a store within reasonable driving distance that carries Swarovski, Leica, Zeiss, and very high-end Nikon binoculars and spotting scopes?

There is at least some relief in the spotting scope arena. Unlike computers and digital cameras, spotting scopes haven't made a significant concept change in decades. So as consumers, our biggest challenge comes in considering three factors:

1. What do you really need the spotting scope for?
2. Which type of spotting scope would fit that need best?
3. How much money are you willing to spend?

*There is no test like the real thing. Here, the author is looking at a small herd of elk that had been laser-ranged at 1,700 yards. The scopes clearly identified the animals as skin heads, which saved a long walk.*

## Spotting Scope Variations

Although spotting-scope variations could be increased by including telescopes used for viewing the stars, our use is a little less ethereal: Hunting, target practice, shooting competition, backpacking, or similar activities are our primary interests here. This narrows the field somewhat, but it still leaves us with a few choices to make.

The spotting scopes you have seen on the range come in two varieties: catadioptric (mirrors and lenses) and prismatic (refractor). With one exception, I'm going to cover the more popular prismatic type used by shooters. Like binoculars and riflescopes, prismatic spotting scopes come with a set of erecting prisms that reverses and inverts the image so that it appears normal.

# CHOOSING A SPOTTING SCOPE



*This Swarovski features helical focusing and first-class optics. The focusing ring can be seen just behind the mounting leg.*



*Leica Televid 77mm APO. The Leica sports exceptional optics. The darker area at the front of the scope is the pull-out lens shade. The focuser at top uses two knobs: one for gross focus, and one for fine. The Leica is fog-proof and waterproof.*



*This Bausch & Lomb is compact, rubber armored, and features zoom magnification. It's a great spotting scope for the hunter.*



You're probably aware that the high-end spotting scopes can be acquired with zoom lenses and that most offer single-power lenses. In the past, it was widely accepted that zoom lenses didn't provide the resolution and clarity that the single-power lens did. I remember 30 years ago purchasing a spotting scope with two single-power lenses for that very reason. And it remains true that single-power lenses can be purchased for most spotting scopes that offer considerably more field of view than that of the zooms. But zooms have gotten so good that image quality isn't the problem it used to be. In fact, modern zoom lenses are so good that it would be my first choice for most uses.

High power position shooters are often served better by the 45-degree angle viewing lens. It's also impossible to view an object up on a hill at close range when using a car window mount without a 45-degree lens. But for many of us, the straight through lens is more convenient. It's much faster to locate objects, and for those of us whose necks take a beating when bent to look down, the straight through lens is the only way to go.

### An Important Feature

There are two kinds of focusers used in the scopes discussed herein: helical and

knob. A helical focuser is a rubberized band or collar around the barrel of the scope (Nikon and Swarovski). Fine focusing is aided by a sturdy tripod and a steady hand. I find it a bit difficult to fine focus using a helical focuser as it tends to be more shaky. Also, the focus is very sensitive, and one tends to shoot past the mark often, requiring a bit of fidgeting. They are faster for gross focus; however, they allow you to more quickly focus on moving objects — birds for example.

Knob focusers use a small knob at the top, side or rear of the scope that requires several turns to move from near focus to infinity. This makes them many times more accurate than a helical focuser. Consequently, the knob focuser is slower than the helical — but more precise. Knob focusers are used where precise focusing is more important than speed.

Leica has partially overcome the faults of the knob focuser by using two knobs: one that focuses more quickly and a second for fine tuning.

### Shop With A Plan

Below is a partial list of the variables you should consider when selecting your spotting scope:

Lense switching Capability  
Zoom magnification

Weight

Helical or knob focusing

Objective lens size

Low dispersion glass

Adequate eye relief

Whatever functions you might want in a spotting scope, the most important should be image quality. Although the brochures all seem to read the same, that doesn't mean that mechanical reliability and image quality are the same. You need to keep in mind the following when making your choice:

- ☉ Bright, high contrast image in daylight
- ☉ Good twilight viewing capability
- ☉ Transmition of colors accurately — no color fringing
- ☉ Resolve of fine detail at the center and the edges of the image
- ☉ Fully multi-coated lenses
- ☉ Flat field of view (very little pincushion or barrel distortion)
- ☉ No rolling distortion
- ☉ Aberration free
- ☉ Easy, smooth focus
- ☉ Can be focused with gloves on easily
- ☉ Can be easily used with or without glasses
- ☉ Secure gripping surface
- ☉ Armored to enhance durability and quietness
- ☉ Nitrogen filled and sealed to prevent fogging

## Understanding Optical Quality

**W**hen choosing a spotting scope, test the scope to ensure the following image characteristics are optimized. This can be accomplished by focusing the scope on the Zeiss Test Pattern (ZTP) at about 60 feet. The following is a brief description of what to look for.

**Aberrations:** Several aberrations might be apparent in a spotting scope. These can be tested with the ZTP. Focus the scope on the ZTP as well as you can. **Resolution** is determined by the smallest ZTP box whose lines you can clearly distinguish separation. **Contrast** is good if the black and white lines remain bright and clean with no graying.

Move the scope on the tripod until the ZTP is near the edge of the image. If the image cannot be focused, it is an indication of **curvature of field**. If the area is blurred, but it can be focused, it is an indication of slight **spherical aberration**.

**Astigmatism:** If the horizontal and vertical are in focus but the diagonal lines are not, the scope has an aberration called astigmatism. If you wear glasses for an astigmatism, make sure your glasses are on during this test.

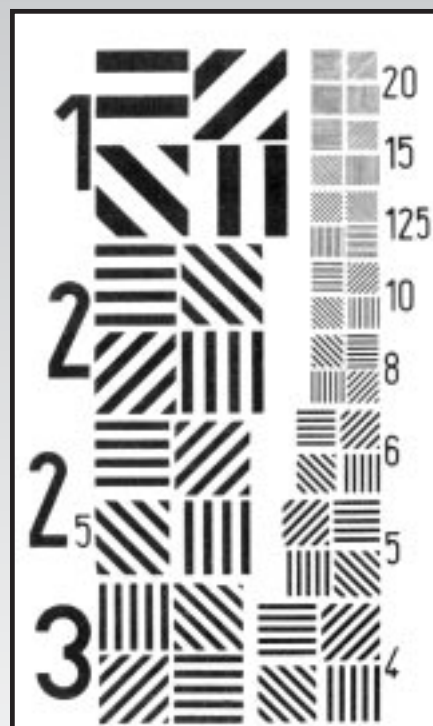
**Barrel and Pin Cushion Distortion:** Focus the scope a on pole or the corner of a building. Move your head from side to side while looking at the vertical line of the pole. If the pole curves, the scope has distortion. Move the scope on the tripod, keeping your

eye on the pole. If the top and bottom of the pole move toward the center, the scope has barrel distortion. If the pole ends move away from the center it has pin cushion distortion.

**Rolling distortion:** Adjust the tripod so that the scope is level and you can move it parallel to the ground. View several parked cars, for example. Move the scope along the line of cars. If the cars coming into the view are small and then grow larger toward the center of the image and then get smaller as they move toward the other edge of the image, the scope has rolling distortion.

**Chromatic aberration** is characterized by color blur or flare, or by color fringes along the borders of objects. The first is called axial chromatic aberration and the second is chromatic difference of magnification. Fluorite, ED, or UD (ultra-low dispersion) lenses are used to correct these aberrations. Achromatic lenses correct chromatic aberration for two wavelengths of light. Apochromatic lenses correct chromatic aberration for three wavelengths of light, often used in super-telephoto lenses.


These are a few of the aberrations to test for in a spotting scope, binocular, or a rifle-scope. Even the best scopes will have a certain amount of these image problems. The manufacturer's job is to keep these residual aberrations to a minimum. Your job is to see if the manufacturer has done



**ZTP courtesy of  
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## Selecting the Right Combination

With image quality as the first and foremost consideration when making your spotting scope selection, weight might be next. But acceptable weight really depends on what you intend to use the scope for. If you have to wear glasses, or insist on wearing them, you need to consider eye relief. Some activities might put you in heavy rains or very damp weather. You might need ruggedness and rubber armoring. Power might be a consideration or a large field of view. If you intend to use the scope for competition in position shooting events, you'll want a 45-degree angle lens.

## The Compacts

For hard hiking chores, I prefer the small tube-style scopes made by Leupold, Nikon, Bausch & Lomb, and Burris. These scopes are made for people on the go who need light weight, compactness, armor and ruggedness. Leupold's 25x50mm is the smallest, and it fits into most packs very comfortably. Tactical shooters often order this scope with a Mil. Dot reticle installed. The Nikon 16-47x60mm and Bausch & Lomb 15-45x60mm are slightly larger and have zoom capability. Burris offers a straight 30x60mm and an 18-47x60mm.

Many of the smaller, tube-style scopes are focused at the ocular lens located at the extreme end of the scope through which the user is looking. This is true for the scopes mentioned here. All of them are waterproof, fog-proof and armored. These scopes have good image quality and range near the \$400 mark.

These scopes have good eye relief and work well for with or without glasses. A step up from that price range is the only mirror-type scope that I feel is really suitable for this type of work — and it's made by Leupold as well. The 12-40x60mm stacked barrel configuration makes it a bit larger than those above, and somewhat more expensive. But it's waterproof and armored. It's also a zoom configuration.

We have thought about our needs in terms of armor, long eye relief, and water- and fog-proofness. The question is: Do we need this kind of rugged exterior? Will we ever need it enough to sacrifice image quality? Without going to the bigger instruments, there are middle grounds. Some are still waterproof, are capable changing lenses, and offer better image quality. Nikon's 60mm objective lens Fieldscope III is one of best I have seen, and it's still small enough to pack, but barely in my opinion. The Fieldscope III can be purchased with ED glass if desired as well, a subject I will cover shortly.

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## An Alternative Idea

Both Zeiss and Swarovski are selling power extenders for binoculars. I find this a very innovative approach for the highly mobile hunter who wants power but not the weight and size of a spotting scope. Both give good image quality when attached to a binocular lens. The Zeiss is more flexible and will fit several binoculars to include the Zeiss Victory series, the Pentax DCF, and the Leicas. Zeiss has tripled the power, which is a bit too much and somewhat reduces image quality because of the reduced exit pupil size. The Swarovski is a doubler, making image quality better, but the unit fits only the Swarovski and takes longer to install.

If you don't intend to be very mobile with the scope, you'll be more comfortable day in and day out with a larger model, particularly one that will allow you to change lenses.

## The 78mm to 82mm Objective Lens Class

This class of scopes offers several advantages over the smaller models, but, of course, sacrifices in size, weight and armor must be made. The larger objective lens scopes lend themselves to better image quality, have the capability to change lenses, are usually photo adaptable, and offer ED or low dispersion glass.

Spotting scopes, binoculars and riflescopes have several parameters which are important to image quality that must be taken into consideration before purchase. I will briefly cover them here because the larger objective lens scopes take best advantage of them.

Exit pupil size is obtained by dividing the objective lens size by the power. For example, an 80mm objective lens scope set on 20X results in an exit pupil of 4mm. Using a variable scope, you can observe this relationship easily by holding the scope at arms length and watching the small circle of light change in the ocular lens as the power is changed. Exit pupil size is of utmost importance in image quality. The human eye can change its exit pupil size from about 7mm to 2mm depending on the light it receives, closing down with more light and dilating with less light. As we age, this ability decreases, and the eye's pupil may not open more than 5mm. This becomes important when viewing objects at twilight or under cloud cover. When the scopes exit pupil is less than about 2mm, the image becomes fuzzy: You lose resolution, contrast and the ability to see. Leupold's 25x50mm scope mentioned earlier is at this lower limit, and while it does a good job in bright sunlight, image quality begins to degrade at twilight.

This can be true as well for the larger objective lens scope if set on high power. Most large objective lens scopes have zoom lenses ranging from 20X to 60X. Put on 60X, the 80mm objective lens scope's exit pupil is



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only 1.3mm. In fact, you'll see a degradation in image quality in any scope as the exit pupil dips below 2.5mm, even at mid day. In twilight, however, the ability to see detail is greatly reduced at this lower exit pupil size.

Another indicator of a scope's ability to see detail during low-light conditions is called the twilight factor. This mathematical expression takes into account both power and light transmission and is obtained by taking the square root of the power times the objective lens size. To view objects in twilight, this relationship should remain above 17. But this is a comparative relationship only, and it's not always applicable. For example, the worst glass made by the least expensive process will still have this same relationship and produce the same number as superior glass.

### Buzz Words To Know

Many of the larger, more expensive spotting scopes can be purchased with what is often called ED glass or low dispersion lenses, achromatic or apochromatic lenses, crown and flint lenses, or some rendition of calcium fluoride crystal, etc. These affect the cost of the scope considerably, and careful consideration must be made when you purchase. Consideration and understanding of multi-coating of the lenses is important as well.

Some manufacturers use the term multi-coating because it sells scopes. In fact, this means only that the outside of both the objective and ocular lenses are coated. Multi-coating can mean a variety of things. The buyer's job is to determine what that means in the scope being considered. The best scopes having the best image quality are coated several times on all air to glass surfaces on all lenses.

While fluoride and ED glass is much more expensive, they aren't always necessary for a high-quality image. Often these are included for the person who expects to use the scope for photography. While the human eye can't always tell the difference in image quality between fully multicoated premium crown and flint achromatic lenses and ED or fluoride crystal lenses, film can. This primarily has to do with color balance and color separation. I've tested both extensively in field conditions and can't tell the difference without putting a camera on them. Although there are manufacturers whose scopes do have some amount of image degradation due to the less expensive lenses, the buyer must consider the much greater cost of scopes featuring ED lenses or equivalent.

Scopes in the 72 to 80mm objective lens category are quite popular and are produced by several manufacturers of high-quality instruments. The Leica Televid 77mm, Nikon 78mm Fieldscope III, Bausch and Lomb Elite 77mm, Pentax PF-80mm ED, Swarovski ST80 HD, and Kowa TSN-820 series are examples of high-quality spotting scopes that vary greatly in cost but very little in utilitarian quality.

Pentax used the lenses from its astronomical scopes to recently build a spotting scope.



The scope is quite large and has a variety of lenses. Using ED glass it is a bit expensive, but the quality is very good. Leica's Televid has been around for many years, the bugs are worked out, and the quality is also very good. Both of these scopes use a focusing knob. The Leica is unique in that it uses two knobs for gross and fine focusing. Nikon's Fieldscope series uses helical focusing by incorporating a band around the body of the scope. The Swarovski is an elegant instrument and its zoom lenses are considered by many to be the best among the higher-priced spotters. Bausch and Lomb is the most unusual looking but has excellent image quality and knob focusing.

Some of the scopes in this class are advertised as waterproof and fog-proof, but the lenses sometimes aren't. If this is important to the user, make sure just what the specifications are saying. Most of them are rather large and heavy as well. Except for transporting them, this isn't often a problem since all spotting scope should be tripod mounted. And the bigger and better the quality of the tripod, the better the results of your viewer will be.

Look also for integral lens shades to protect the objective lens from incident light. It's not absolutely necessary, but it's a nice feature. Long eye relief will make for more comfortable viewing in the long run, and it is a must feature for eyeglass wearers. Something above 20mm of eye relief is required.

Be wary of scopes in the lower price ranges. You get what you pay for in most cases. But bargains are out there. Be cautious. Find out about the warranty and return policy if the scope is not what you expected.

This article is a brief look into the subject of spotting scopes. Certainly a book can be written on the subject. Prudent buyers will decide the use to which the scope will be put, the features and power required, and how long they are willing to save their money for a higher-quality image.



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## FLINCHING Part II

**F**linching and blinking are the biggest obstacles to overcome when shooting accurately. Last issue, we talked about diagnosing the presence and severity of these reactions by using downrange video cameras and the "ball and dummy" exercise. If you are one of the rare individuals who never flinches or blinks, good for you. Keep doing what you're doing. If you discovered a problem, let's work on a cure.

Flinching and blinking are habits developed from reacting to the blast and recoil of the shot. The way to replace bad habits with good ones is to establish proper shooting techniques (hold, indexing, trigger release, follow through) while eliminating the negative effects of blast and recoil. And the best way to do this is by dry-firing.

Many believe that the only reason for dry-fire practice is to save money on ammunition, or save the inconvenience of driving to a range. Certainly these are worthwhile benefits. But even if you live next door to a range and have unlimited access to free ammunition, dry-firing should be a regular part of your practice. Military shooting teams, which have those resources available, still spend considerable time dry-firing. The reason: Dry-fire builds positive habits. This has been well-documented by the best shooting coaches.

Bill Pullum (Lt. Col., Ret., U.S. Army), who coached Olympic and International U.S. shooters to unparalleled success, wrote: "Shoulder jerks, eye blinks, flinches of all types, delayed reactions and false starts can all appear in the trigger-pull sequence... when they do, trigger-pull techniques usually must be relearned from the beginning. This conditioning practice is best accomplished by dry-firing, which is probably fifty to a hundred times faster than any other method" (*Position Rifle Shooting*, Bill Pullum/Frank Hanenkrat, Stoeger Publishing Co. 1973).

A. A. Yur'Yev, competitive shooter and coach for the former Soviet Union, wrote: "Dry-firing has its favorable

aspects which cannot be replaced by live firing... the shooter is able to detect a number of errors in the technique of firing a shot, including defects in the trigger release. If jerking the trigger is detected... the shooter should stop live firing and begin dry-firing to enable the nervous system to rest somewhat from recoil and the sound of the shot... by doing this, some of the acquired conditioned reflexes detrimental to shooting such as flinching... excess straining of the muscles... blinking at the sound of the shot... will begin to decrease and then completely disappear" (*Competitive Shooting*, A. A. Yur'Yev, NRA Publications, 1985).

When dry-firing, safety must be the first consideration. Only dry-fire when aiming at a backstop that will absolutely contain a bullet. Finding a safe backstop isn't that easy. When I lived in a city, I used to dry-fire in my basement at a target taped to a concrete foundation wall. Frankly, I can't think of a satisfactory alternative. Alternatively, carry out your dry-fire practice at a range where live-firing would be possible. There should be no live ammunition anywhere in the practice area. Check, double check, and check yet again to be certain the firearm is unloaded — and then treat it as though it is loaded.

It seems hard to believe now, but one

writer, now long gone, wrote that he used to dry fire in his back yard using a light-colored brick in a neighbor's chimney as a target. Another author made the suggestion to practice running shots from your living room, using the wheels of passing cars as aiming points. Try that today, and you may end up with a jail term, a criminal record, or a prohibition against owning firearms.

Dry-fire every shot with all the focus and attention you can manage. Sloppy, careless practice sessions do more harm than good. Index the rifle on target and concentrate on a smooth trigger release. Maintain a sharp focus on sights or reticle throughout the trigger press. Ideally, the trigger press should impart no movement to the sight picture.

Concentrate particularly on evaluating the sight picture at the exact instant the trigger breaks. The ability to "call" the shot (to see and evaluate the sight picture as the shot is being fired) is critical. Blinking just as the shot fires is such a common habit that I'm convinced many shooters are completely incapable of calling the shot. Until you can keep your eyes open and see the exact position of sights or reticle before and during recoil, there isn't much you can do to improve.

Dry-firing should not completely replace live-fire. Regular live-fire sessions should be scheduled to keep familiar with the effects of recoil and report. It's best to keep individual sessions short to keep bad habits from reoccurring.

Accuracy testing from the bench does little to improve practical shooting skills. Make a point of practicing from practical positions. If you detect any signs of blinking, go to intensive dry-fire sessions until proper habits are re-established.

I love the convenience of shooting air rifles, and I shoot one year-round. A couple of months before hunting season, I go to scheduled practice sessions with whatever rifle I expect to be using. A schedule that works for me is 30 dry-fire rounds daily (10 each offhand, kneeling, and sitting) plus 10 live-fire rounds weekly (five offhand, five sitting). Every shot is fired with all the attention I can command. (Shots fired sighting in or testing equipment don't count.)

This isn't much shooting by competitive standards and isn't enough to improve significantly, but I find it enough to maintain skills already acquired by more intensive practice.

*Conducting all of your rifle practice from the bench rest will neither show you your errors nor help you practice the right techniques. Get out there and do some field-type shooting!*





## 700 TITANIUM

continued from page 33

action to the stock is very good, with both evidently made to close tolerances. For the accuracy fanatic, nothing really replaces true hand-bedding of the action, but this fit is certainly more than acceptable.

Interestingly enough, the lightweight barrel isn't completely free-floated. The barrel doesn't touch the stock from the area ahead of the chamber to near the end of the forearm. About an inch back from the forearm tip is a V-block in the stock that puts a few pounds of pressure on the barrel. On the test rifle, it seemed to take about 5 to 6 pounds of pressure to pull the stock away from the barrel.

Arguments about forearm barrel pressure versus free-floating never end. Custom gunsmiths tell me that some pressure usually enhances accuracy with light barrels, provided that the stock is stable and the pressure is consistent. If the forearm moves around due to temperature or humidity changes, the result can be changing point-of-impact. Free-floating barrels may not always provide the best accuracy, but they do provide a way of getting highly consistent performance.

At any rate, the M700 Titanium does have the forearm V-block, and accuracy was certainly acceptable. Should the owner prefer to free-float the barrel for any reason, it would be a simple matter of sanding the block down flush with the rest of the barrel channel.

The stainless-steel bolt is lightened, too. The bolt handle has been skeletonized on the inside, the bolt knob hollowed. Spiral flutes on the bolt body further reduce weight, help retain lubricant, and channel dirt into the flutes for smoother operation.

The sample rifle on loan from Remington was a long-action model in .30-'06. Barrel twist in this caliber is 1:10. Overall workmanship and fit is as nice as I've seen on a production rifle in many a moon. Metalwork is excellent — lines crisp and straight, barrel and receiver polished to a smooth yet subdued finish. Bolt operation is slick as grease. Even the trigger-pull is better than I've come to expect from factory rifles. It's a bit heavy at a little over 5 pounds, but it's crisp and clean with minimal takeup and overtravel.

I fitted a Leupold 2.5-8X Vari-X III scope, a proven veteran of long use, in Leupold rings and bases. The result is a handsome, practical and light-weight package. It was fun handing it to veteran rifle shooters and seeing them practically toss the rifle in the air because of the unexpected light weight. On the other hand, it was difficult getting it out of their grasp. Practically everyone who handled the rifle wanted to purchase it on the spot.

Many light rifles reduce weight by using light, short barrels with standard receivers. This results in a muzzle-light balance that is hard to hold steady from field positions. Despite its light weight, the M700 Titanium balances and handles more like a standard-weight rifle, with enough weight out front to hold steady.

## Dependable Accuracy

The rifle proved accurate with a variety of ammunition. The light barrel heated up fast, so groups were kept to three shots, usually resulting in neat triangular groups of around 1.5 inches. This particular Remington seemed to be a bit of a traitor to its name: It did its best work with Winchester 168-grain Ballistic Silvertips and averaged 1.1-inch groups for three shots.

Most groups were fired with 30 seconds or so allowed between shots for barrel cooling. I also tried groups that were fired as fast as the bolt could be worked and aim could be taken. The first three shots gave groups the same size as those in which the barrel was allowed to cool. Quickly loading three more rounds and repeating gave a bit larger groups, though still under 2 inches. Under hunting conditions, I wouldn't be at all concerned about changing point-of-impact due to barrel heating. After six shots, the barrel was too hot to touch (this was in July and August), yet bullets were still striking within an inch of original point of impact.

What about recoil? A .30-'06 in a rifle/scope combination weighing under 6.5 pounds does tend to come back fairly hard, but the good stock design and thick recoil pad took out the bounce and bite. Watching from the side while Montana gunmaker Mike Johnson fired the rifle, I could see that there is actually very little muzzle jump. Recoil energy with 180-grain loads works out to about 27 ft.lb., comparable to that of the .300 Magnum in a 9-pound rifle.

Pure titanium has a tendency to gall, according to the articles I consulted. When properly alloyed and hardened by heat-treating, this tendency is greatly reduced. With any bolt-action rifle, the rear surface of the locking lugs should be lubricated with a dab of high-pressure grease or a dry lube containing graphite or molybdenum disulfide. There's no need to overdo it. Just put a light coat of lubricant on the surfaces where the lugs engage the receiver. No evidence of galling was found with the test rifle.

For anyone wanting full-size rifle performance in a lightweight package, the Remington M700 Titanium is an outstanding choice. I suspect demand will be such that these rifles may be in short supply for a time. At the time of this writing, the long-action version in .270 Win and .30-'06 calibers are starting to appear on dealer's shelves. The short-action version should be on the shelves by December of 2001 in calibers .260 and 7mm-08 Rem. I have my heart set on a 7mm-08 with compact scope, lightweight rings and bases, and an all-up weight of around 6 pounds. Suggested retail is currently listed at \$1,199.



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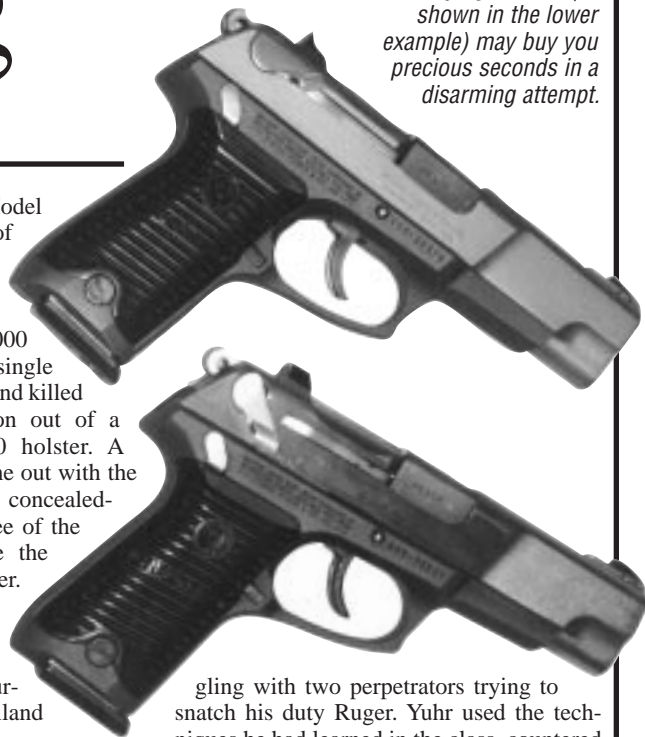
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# Surviving Disarming Attempts

*Two Ruger P97 .45s: Carrying on-safe (as shown in the lower example) may buy you precious seconds in a disarming attempt.*



**O**ld cops give young cops a warning: "Every time you're in a fight, there's a loaded gun present. Yours."

If you aren't prepared to counter a gun-grab, you aren't really prepared. One factor to consider is a sidearm that is "proprietary to the legitimate user."

In an article on police firearms training, Jim Nesbitt of the Newhouse News Service wrote the following for the 9-10-'01 "New Orleans Times-Picayune":

*She ripped the semiautomatic out of his holster, stuck it in his face, and pulled the trigger — and Wayne Dobbs knew there was only one reason his life didn't end in a flash of brain, bone and blood. The mentally unbalanced woman had failed to flick off the thumb safety of Dobbs' cocked-and-locked .45-caliber pistol.*

*On that New Year's Eve 20 years ago, this not-always-reliable mechanical device was the difference between being dead and being scared to death. Staring down the barrel of his own gun, Dobbs, then a 23-year-old patrol officer with a suburban Dallas police department, had this thought: "This is it. I'm finished."*

*After he wrestled the gun away and had the woman safely handcuffed, he had another thought: "I'm not nearly as squared away with this as I need to be." The harrowing moment transformed Dobbs into a relative rarity in American law enforcement, a true believer in the notion that he needed training beyond the police academy and the bloodless calm of the gun range.*

Whew. Scary, huh? Now you're seeing one reason why I've always been a believer in carrying an on-safe gun.

Wayne Dobbs went on to become a superb firearms instructor and master police officer. Last time I saw him, he was carrying the weapon his department saw fit to issue: a high-capacity .40-caliber pistol with no safety catch.

## Retention Holsters

Some 20 years ago, Bill Rogers designed the SS-III security holster, which became known as the first police scabbard with "Level III security" because three movements (release one strap, release the other, rock the gun in a certain direction) were necessary to clear leather. It was subsequently

offered by Safariland as the Model 070, and more than a million of them have been sold since to uniformed police and security personnel.

In 20 years and 1,000,000 holsters, I'm not aware of a single case of a cop being disarmed and killed with his or her own weapon out of a Rogers/Safariland SS-III/070 holster. A few years ago, Safariland came out with the 0701, a holster suitable for concealed-carry that has two out of three of the retention features that made the 070 such a successful life-saver. I'm not aware of a gun being snatched out of one of these holsters, either. Any law-abiding armed citizen can purchase an 0701 from a Safariland dealer.

Is a retention holster tougher for you to draw from? Sure. It requires more practice. Is it worth the effort? The facts speak for themselves with a resounding YES!

Just because you're a private citizen carrying concealed, don't think that you won't experience a felonious gun-grab. The gun might become visible and trigger the grab. The bad guy may be a disgruntled employee who knows where you carry your gun. The situation may start with a hand-to-hand fight in which he grabs you around the waist and feels your gun!

## Retention Skills

While working as a taxi driver, Mark Yuhr was forced to kill a hold-up man. The perp tried to shoot him with a stolen S&W 9mm whose original owner had left it on-safe. When the gunman pulled the trigger on Yuhr, nothing happened. Yuhr drew his cocked-and-locked Colt .45 auto — he knew where his safety was — and cut down his attacker. It then occurred to Yuhr that he should sharpen his survival skills, and he enrolled in my LFI-I class. He liked it and took the follow-up class, LFI-II, which goes heavy into weapon retention skills, i.e., the physical techniques you can use to counter a disarming attempt.

When working as a security guard, Yuhr had to carry a revolver with no safety catch. On one occasion, he found himself strug-

gling with two perpetrators trying to snatch his duty Ruger. Yuhr used the techniques he had learned in the class, countered the attack, and survived.

He used a technique developed by Jim Lindell, the master of handgun retention who developed his system while teaching Kansas City cops. Such training is normally available only to police, through National Law Enforcement Training Center [800] 445-0857. The Lindell method, by far the most proven, is taught to civilians nationwide by Lethal Force Institute [800] 624-9049 and on the West Coast by Firearms Academy of Seattle [360] 978-6100. Other handgun retention systems are taught by SIGarms Academy in New Hampshire [603] 679-2003, and the Modern Warrior dojo in New York [888] 692-7746.

The possibility of being killed with your own gun is very real. A proprietary weapon, a security holster, and well-honed gun retention training — not necessarily in that order — have all been proven to save lives. Body armor and second weapons are also important elements in situations like these.

The officers in my department go on duty with Ruger .45 auto pistols that can be carried on safe. They are worn in department issue Safariland 070 holsters. Our department has adopted the Lindell method of handgun retention training.

I won't lose sleep tonight worrying about one of these officers being disarmed.





## DUTYLOADS

continued from page 22

Gold Dot 124-grain and reports excellent street results. Denver PD has adopted the same round for its officers who choose the 9mm from the optional weapon list.

Winchester's Ranger Talon 127-grain +P+ has also earned an excellent reputation. Forward-thinking, research-intensive departments, such as the San Bernardino County (CA) Sheriff's Department, have adopted it for deputies who carry 9mms. But, as noted, the Ranger Talon series is sold only to law-enforcement agencies.

**115-grain:** Federal's 9BP, a 115-grain at 1,160 fps, is the one standard pressure 9mm load that has been around for roughly a quarter century without any horror stories of stopping failures. Every shooting with it that I know of has resulted in a stopped offender, usually with mushroomed bullets lodged in the far side of the body. Last I knew, New Jersey State Police (HK P7M8) and Philadelphia PD (Glock 19s) were still using it with good results.

However, the best results in this grain weight, and indeed in the caliber, have been logged with the Illinois State Police Load. A 115-grain JHP at 1,300 to 1,350 fps, it is available to police from Winchester, Federal and Remington; and to civilians from Pro-Load, Black Hills and others. When you see an autopsy report that indicates the cause of death as "cardiac maceration," and there was only one 9mm round fired, you can be pretty sure it was one of these rounds. *When in doubt: Pro-Load Tactical (1st choice) or Federal 9BP 115-grain JHP.*

### .357 Magnum

**125 grain:** Let's save some time here. Ray Chapman used to say that the only reason for putting up with the nasty recoil, muzzle flash and deafening blast of the .357 Magnum cartridge was the tremendous stopping power of the 125-grain hollowpoint. Chapman was probably right.

Remington led the way on this more than a quarter century ago with a bullet that screamed out of a 4-inch barrel at as much as 1,450 fps. Its scallop-jacketed hollowpoint tended to open and shed fragments to the side like little razor blades while the still-expanding core of the bullet kept going. Federal's answer was to use a wider-mouth hollowpoint for super-fast expansion. In both cases, the rounds almost never over penetrate, and Indianapolis Police Department reported that in more than 200 shootings there was never an effective return of fire by a perpetrator after taking a solid hit with one. Kentucky State Troopers had so many one-shot stops with it, even with occasional non-centered hits, that they referred to the 125-grain Magnum as "the magic bullet." Texas state troopers said they missed the "lightning bolt effect" of these rounds after they went to .45s, which made the troopers eager to adopt the .357 SIG with similar ballistics.

Personally, I could never see much difference between the Remington and the Federal in flesh, or for that matter, their Winchester and CCI counterparts. But there's no question: Ed Sanow was right when he called the 125-grain semi-jacketed hollowpoint .357 Magnum the "king of the street." It delivered a destruction cone optimized for erect bipeds, which is why it outperformed much more potent hunting rounds such as the .41 and .44 Magnum when used in the anti-personnel function. The bigger Magnums frequently spent a lot of their energy exiting the offender's body and looking for a baby carriage on the other side. The 125-grain .357 dumped all its energy in a massively wide path between the front and the back of the offender's torso. Lighter .357 rounds might not go deep enough, and heavier ones often overpenetrated, but the 125-grain hollowpoint was ideal for its purpose at .357 Magnum velocity. *When in doubt: 125-grain Remington or Federal semi-jacketed hollowpoint.*

### .38 Special

**158-grain:** In 1972, Winchester introduced the 158-grain +P hollowpoint all-lead .38 Special round. It was immediately adopted by the St. Louis Police Department (hence its factory code, SPD) and the FBI. Countless other agencies followed. This proved to be the first .38 Special that hit like a .45; it even worked on bowling pins.

Earlier semi-jacketed hollowpoints had brought the .38 Special cartridge up off its knees, but this one lifted it proudly to full stand-up status. The problem had been that at standard or even +P velocity, there wasn't always enough "oomph" to peel back a tough copper jacket, something that happened decisively when the same weight and style bullet was honked up to .357 Magnum speed. To open the semi-jacketed rounds, makers had to go to +P+ velocity, which opened up the bullet so fast it didn't always gain enough penetration.

The "FBI Load," as it was dubbed, would do about 13 inches of penetration into gelatin, more than enough to pass the Bureau's later standard. Being soft lead, it would usually open as soon as it hit, even if the suspect wore heavy clothing and even if it was running slow out of a 2-inch barrel. Chicago, Metro-Dade, Miami, the Canadian Mounties, and damn near every department in Ohio adopted it when the .38 Special revolver was king. The 158-grain LSWCHP (lead semi-wadcutter hollowpoint) +P did the job. When each of those agencies went to auto pistols, it was to get more bullets, not better ones.

This load is not so "brand sensitive" as some others. I always tended to load from whatever box was nearest to hand. When I ran across rare failures to expand, it tended to be the relatively hard Winchester bullet, which was hardened to eliminate complaints

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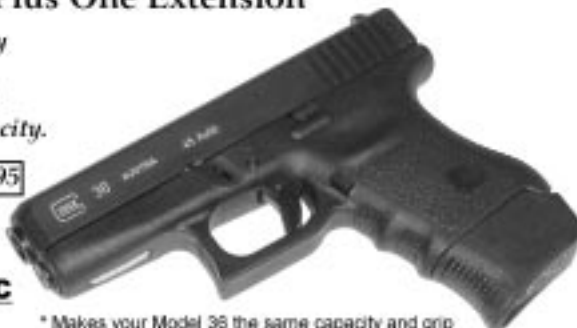
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about excessive leading. On the other end of the scale, the Remington brand — used for many years by DEA in the backup guns of its agents and the hideout guns of its under-cover operatives — always seemed to open even when fired from snubbies, DEA instructors told me. Federal seemed to hold a middle ground.

Recoil is very manageable in full-size service revolvers, a bit snappy in a steel-frame snubby, and downright nasty in an aluminum (let alone Titanium or Scandium) J-Frame. But, as Chapman said of the 125-grain Magnum in the service revolver, it's worth the pain and the blast for what it does at the opposite end.

**125-grain:** Even at +P velocity, the 125-grain semi-jacketed hollowpoint was one of those, "sometimes it worked, sometimes it didn't." The most useful .38 Special load in that weight, I would submit, is the standard pressure Nyclad "Chief Special" load conceptualized by the old S&W Ammo division and now produced by Federal. Recoil is light, making it suitable for the very light revolvers and for those sensitive to "kick." The nylon coating allows a very soft lead alloy that expands even at low velocity. It doesn't have the power of the +P 158-grain LSWCHP, but it's the best you'll find in a "minimalist" .38 Special round, and it would be my own choice for the bottom cut-off point of effective self-defense handgun rounds. *When in doubt: 158-grain +P LSWCHP, Remington slightly preferred.*

## What's Missing

There was only space here to cover the half dozen most popular rounds in serious fighting pistols. The baby guns, .380 and down, were left out. So were calibers that are almost rare exotics today: 10mm Auto, the big-bore revolvers, and every Magnum save the .357. Frangible "trick bullets" were omitted, too: limited database in the "big picture," and usually too expensive for the shooter to train with. I generally don't trust any round that hasn't been through the given gun at least 200 times with zero malfunctions.

With some of the exotic cartridges, that's \$600 to see if the ammo works in your gun or not.

Those who test primarily in gelatin pooh-pooh "anecdotal" research and use that word thinking you'll associate "anecdote" with "joke." Look it up: The first definition of anecdote is something that actually happened. While each has a piece of the puzzle, if I had to choose between Fackler's approach and Marshall's, I'd go with Marshall. I will end with advice you've heard before: "He who ignores history is doomed to repeat it." History shows that the above rounds are working the best in their calibers of what is available right now for handgun self defense. End of story.





## REMINGTON SEMINAR

continued from page 12

believe the cartridge was used in a production rifle until now. It's a neat little cartridge and the parent case for the .300 Whisper so the availability of a full-size rifle to shoot it is going to be a very useful addition to the varmint hunter's battery.

The ammo will be in Remington's Premier Varmint line and loaded with a 50-grain Hornady V-max bullet. From the 24-inch rifle barrel muzzle velocity is stated at 2,995 fps, which is almost as fast as the .222 Remington. You'll see a full report on this one, too. But for now, I can say that shooting it at the seminar was a blast. The recoil is virtually nil, and the round will be a great choice for use in areas where noise might be an issue. At medium ranges of 200 to 250 yards, it should be a peachy prairie dog or groundhog rifle. At those ranges, I was able to wear out some small steel plates, so accuracy seems to be good.

### Return Of An Old Favorite

Remington wasn't through with resurrections, either. To the delight of the writers present, Remington announced the reintroduction of the 16-gauge in Model 870 Wingmaster and Express pump guns. There was some lively discussion over whether or not the 16 was dead or dying, but supporters far outnumbered detractors. Remington didn't expand its offering of 16-gauge shotshells, but all the ammo companies have several different loads.

As is always the case, most of what I saw is not yet available. I hope, however, that by the time you read this, they will be. It's too late for Hevi-shot to be used during the waterfowl seasons, but it should be ready for spring turkeys. And I think this is where it is really going to be revolutionary. The stuff is expensive, but turkey hunters don't shoot very often, and the improved patterns and greater range should more than justify the cost.

My limited experience with the short magnum cartridges makes me really want to know more. As a handloader, it's obviously a new challenge; as an accuracy nut, I want to investigate the potential of the cartridge. Hunters won't need much proof. After all, they use the same bullets at the same velocities as two of the most popular hunting cartridges around, but the suitability for use in short-action rifles offers new possibilities.

For me, the Remington seminar is an annual *must*. This one was exceptional in the breadth and newsworthiness of products shown. And I know the coming year is gonna be fun with all the neat stuff to play with. Stay tuned.



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## AN-94 NIKONOV

continued from page 39

what a tall order this was. The AK-74 is extremely controllable, has very light recoil, and is eminently reliable. At least eight different design teams, including one led by Mikhail's son, Victor Kalashnikov, submitted rifles to the competition. In the end, Gennadiy Nikonov's entry was selected and adopted as the AN-94. While placed in limited production in 1998, it has only been built in limited quantities due to manufacturing costs. This has kept the rifle a mystery here in the West.

On September 12, our team met with Alexander G. Likhachev, the general director of Izhmash. He graciously gave us permission to testfire the AN-94 and other new Russian weapons. A few hours later, we pulled into a small 100-meter range where a group of men were gathered. There was not only a small security detail and members of Izhmash's Public Relations Department, but also a member of the Nikonov design team. With him was an AN-94 built in 2000, serial numbered 1990893, plus a bunch of 30-round mags!

### At Last — A Close Look

All it takes is hefting the AN-94 to see that it's a completely different animal than anything that came before it. The first thing you notice is that the upper and lower receiver are produced from a modern fiber-glass-reinforced polyamide. This is a rifle that would make Gaston Glock smile. When I first saw pictures of the AN-94, I can remember thinking that it looked somewhat awkward: It feels good in your hands, but different.

With the sidefolding stock extended, the overall length is 37.1 inches, and with the stock folded, it drops to 28.6 inches. It features a cold hammer forged 15.9-inch barrel that's chrome-lined for durability. Unloaded, the Nikonov tips the scale at 8.8 pounds, so it's no lightweight. Locking in a loaded 30-round mag brings the weight up to almost 9.5 pounds. In comparison, a loaded AK-74M weighs only 7.9 pounds.

The next feature that grabs your attention as you're pawing it over is the rifle's muzzle attachment. Referred to as a flash eliminator, it's a significant departure from the brake utilized on the AK-74M, or anything else in the world for that matter. An asymmetrical design, it features two chambers with a port on either side at the muzzle. In addition, there is one strategically placed vent hole on the upper right of the first chamber. This is referred to as a "whistle," which Krebs took to indicate a sonic whistle.

A sonic whistle is very old technology, to the point of almost being forgotten. Similar in concept to a dog whistle, it alters the report to an ultrasonic pitch the human ear cannot detect. In the past, the Russians had problems with hearing loss from troops using the AK-74, so anything that can drop

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the weapons sound signature is appreciated. The unit removes easily by simply depressing a lever and turning it 90 degrees. Looking through it revealed no obvious voodoo. It doesn't surprise me that the Russians have moved away from the AK-74M style muzzlebrake. While effective as a brake, it does have the undesirable side effect of producing a huge muzzle flash in lowlight.

The next thing you notice is the radical departure in rear-sight design. Gone is the traditional Mosin-Nagant style tangent rear sight. In its place is a simple, unique and effective asterisk-shaped diopter sight. Protected from blows, it is calibrated for 200 and 400-700 meters. In addition, the 200-meter sight has two holes at its top for Tritium inserts for low-light use. The front sight is a protected post adjustable for windage and elevation that also accepts a Tritium insert.

While some of the controls of the AN-94 are quite familiar, others are not. For instance, the reciprocating bolt handle is on the right, just like an AK's. Also, the magazine release is located and functions the same as that of an AK. The safety and selector lever, however, are a different story. The safety is a crossbolt located above the magazine release and can be easily manipulated via the trigger finger. This finally gives the Russians a rifle whose safety is easily disengaged from a firing grip. However, the selector is a separate lever located at the rear-left of the receiver. Its forward-most position is semi-auto; its middle position is 2-round burst; and its rear most position is full-auto. While the safety is easy enough to disengage, the selector is somewhat awkward to operate, especially if moving to full-auto.

The weapon features the familiar scope rail on the left side of the receiver. This allows rapid mounting of day and night optics. Whereas the AKS-74 and AK-74M stocks folded to the left, the AN-94's stock folds to the right. This allows an operator to fold the stock with optics mounted, something previously not possible. For maintenance, a sectioned cleaning rod is stored in the stock. Sling swivels are located on the left side of the weapon. Our test weapon had two rear swivels mounted to facilitate either a normal or tactical carry.

### How It Works

In operation, the AN-94 is totally unique. Whereas Western designers have for the most part done the bullpup shuffle and beat 1950's designs to death, the Russians have indeed been hard at work. Nikonov designed a system that is both recoil AND gas operated, what the Russians refer to as Blow Back Shifted Pulse. This ground-breaking rifle fires at a high cyclic rate of approximately 1,800 rpm when set on two-shot burst. When fired on full-auto, the first two rounds are at 1,800 rpm then the rifle kicks down to a low rate of 600 rpm.

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A very simplified explanation of how the AN-94 functions follows: When the first round is fired, the entire barreled receiver assembly begins to recoil rearward. As the bullet passes the barrel's gas port, a small amount of gas is tapped off. This forces the bolt carrier to the rear within the already rearward moving barreled receiver. The bolt is unlocked, the empty ejected while at the same time a round is stripped from the magazine and placed in a feed tray by a cable and pulley system. When the bolt reaches the end of its rearward travel, it returns forward, chambers, and fires the second round. Meanwhile, the barreled receiver assembly is *still* moving to the rear. These two rounds are gone before the recoil impulse ever reaches the shooter. On full-auto, the mechanism then kicks down to cycle at 600 rpm. Releasing the trigger resets the mechanism to fire the first two rounds at 1,800 rpm.

### Virtual Testfire

In actual use, the AN-94 is most impressive. Push a button and you can unfold the rifle's stock, which locks solidly in place. A standard 30-round 5.45x39 AK-74 magazine rocks in, although it sits angled slightly to the right. With a twist, the rear sight rotates to the desired aperture. The bolt is easily retracted and, when released, runs home smartly. Thumb the selector to the desired firing mode, such as two-shot burst; lean into the weapon slightly as you place the front post on your target; push the crossbolt safety off with the trigger finger, and squeeze. Two empties explode into the air, and dual 52-grain slugs smack the target, yet the rifle remains flat. There is no muzzle rise and no rearward push. The member of Nikonov's design team that demonstrates the rifle to us keeps both rounds from a two-shot burst on a brick at 100 meters. Firing offhand in two-shot burst mode, he rapidly works his way down a line, vaporizing them into a cloud of dust.

As I take pictures, Mark Vorobiev eagerly accepts the opportunity to shoot the AN-94. Both he and, later, Marc Krebs are extremely impressed by the rifle. Krebs hammers some hanging steel gongs at 50 meters on full-auto, sending one flying. The Russians laugh and call him a hooligan. When I take my turn behind the AN-94, I find out what all the fuss is about.

On semiauto, the rifle feels like a traditional self-loader, but with almost no recoil. Sight picture is very similar to that of an M-16's. Thumb the selector back, with some difficulty, to two-shot burst mode, and the rifle comes into a league of its own. Touching the trigger puts two empties in the air, yet the muzzle stays perfectly flat! The rifle feels completely different than anything else I have ever shot. I work part way through a magazine and then kick the selector to full-auto and hammer out a long burst. The rifle just hangs there, the barrel

reciprocating back and forth at 600 rpm as empties spill out. Kicking the empty magazine out, I stuff another one in and dump it in one long 30-round burst. Not only does the muzzle stay flat, but the steady rearward push associated with full-auto fire is nowhere to be found.

Full-auto fire with this rifle is addictive, and we hammer out magazine after magazine swapping the rifle between the three of us. Controllability is easily superior to an AK-74M, M-16A1, SIG-551 or anything else I have fired. The more I shoot it, the more impressed I become. After firing 200 rounds, mostly full-auto, the weapon's forend is still cool enough to place your face against. We slap our host on the back and nod approvingly, but he already knows that the AN-94 is in a class by itself.

The AN-94 is a great leap forward in the world of small arms. While not flawless, it's as close as anyone has yet come to building the perfect assault rifle. With it, Russian SPETsNAZ troops will have a significant advantage over Kalashnikov armed foes. The 5.45x39 cartridge has proven itself to be an effective fight stopper in actual combat, and it complements the AN-94 nicely. The Russians claim an effective range of 600 meters for the combination, a significant increase over the AK-74M. The sights and safety show a change in Russian thinking away from the agriculturally simple AK style. When considering that combat effectiveness is 1.5 times better than anything currently fielded and that reliability is superior to the legendary Kalashnikov, you can see what a step forward the AN-94 is.

*Much thanks to Eric Mustafin, Ahat Khisamutdinov and Vladimir Makarov, and to everyone at Izhmash OJSC and Tula Cartridge Works.*



*David M. Fortier is a freelance writer and photographer, student of foreign small arms, and a longtime GUNS reader. A serious accuracy buff, he currently resides in rural Maine.*



## GARY REEDER

*continued from page 29*

The new grip frame is Gary's popular *Gunfighter* configuration and is slightly smaller and slimmer than the factory's, with no sharp edges. At this point, the weight-saving efforts become more subtle and artistic. The cylinder pin is shortened so that only a small, thin lip of metal protrudes in front of the frame. Likewise, the ejector rod button has been slimmed to a thin piece of metal. To further remove metal and save weight, the recoil shield on both sides of the frame (including the loading gate) has been dishd out and recontoured to maintain symmetry.

While a Vaquero doesn't have many sharp edges to start with, the Backpacker is totally "dehorned," including front and back edges of the cylinder, all edges of the frame, the entire trigger guard and trigger. A complete action job is performed resulting in the slickest trigger pull I've experienced on a Vaquero. Finally, the entire gun is given the Reeder Vapor Hone finish, and you have an extraordinary backpacking pistol that weighs a scant 28 ounces.

Reeder's Website cautions against using +P ammo in the lightweight Backpacker because of recoil, not because of the gun's strength. You can order the gun sighted in with the ammo of your choice, but keep in mind that these are fixed sights, and the impact point will vary from one shooter to the next.

After the gun arrives, you might want to try a few rounds of progressively more powerful ammunition to determine the different points of impact and the power level at which you exceed your level of tolerance. Although you might not enjoy shooting +P loads for practice, particularly with the heavier weight bullets, a couple of rounds fired in a stress situation would probably go relatively unnoticed. In truly defensive situations, ranges tend to be short, and you should be able to find ammunition that balances your needs with your abilities.

One of the best things about Gary's Website is that you can "pick and choose" and "mix and match." If you like the size of his Backpacker but prefer the finish of his Black Widow, you can have a *Blackpacker*. Use his series of existing handguns as a guide, discuss your ideas and thoughts with him, and order whatever strikes your fancy. Being the innovative and creative craftsman that he is, I'm sure Reeder has something you've secretly dreamed of having.

It is said that imitation is the sincerest form of flattery. If true, then Ruger must be a serious admirer because the new factory Vaquero's Birdhead grip bears a striking resemblance to the Reeder Tombstone Classic.



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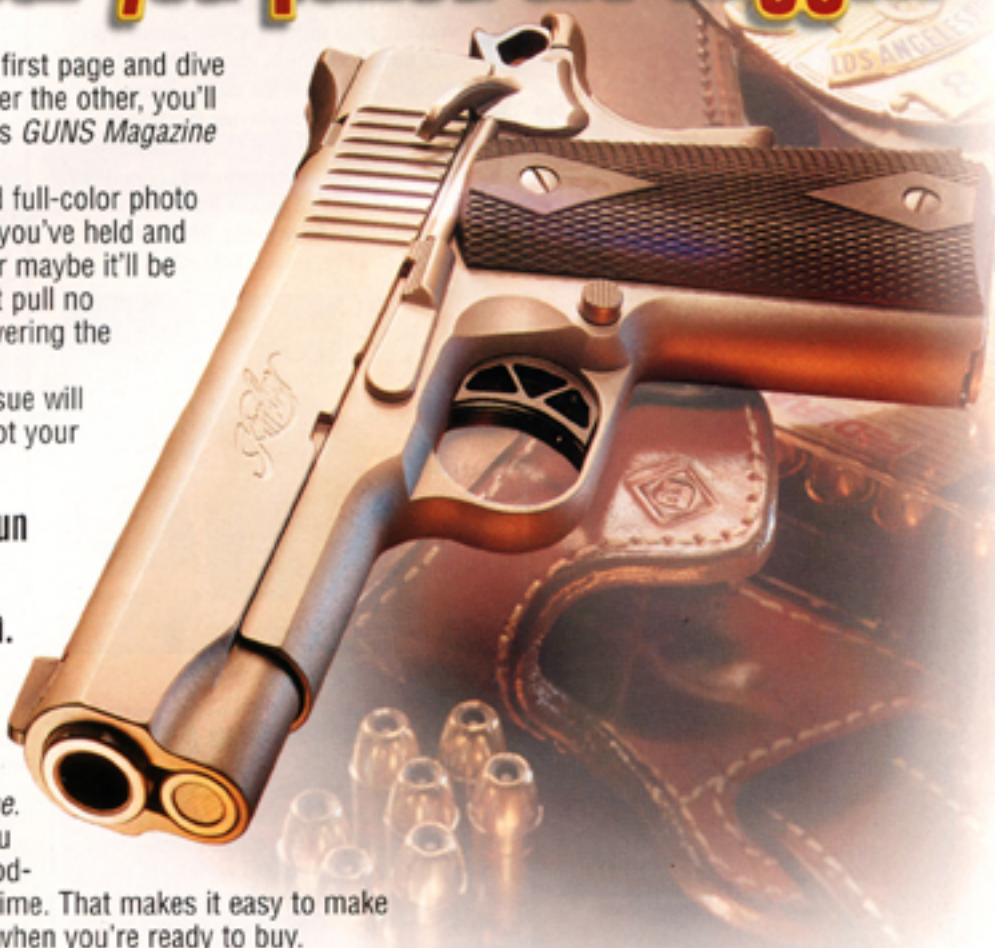
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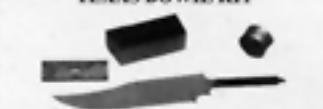
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Other features include a 26-inch fluted stainless steel barrel, fully adjustable metallic TRU-GLO fiber optic sights, jeweled bolt, match-grade adjustable trigger and engraved trigger guard featuring the Knight logo. Contact Knight Rifles, P.O. Box 130, Centerville, Iowa 52544, telephone: [641] 856-2626, FAX: [641] 856-2628, e-mail:

mbartimus@knightrifles.com, Website: www.knightrifles.com



## New Duovid Binocular

From Leica

Leica's new Duovid 8+12x42 sport binocular offers multiple magnifications in one ergonomic optical housing. The Duovid offers the unique ability to glass for game with 8X magnification and then gain a closer detailed look with

12X magnification. The twist-up eyecups are multi-

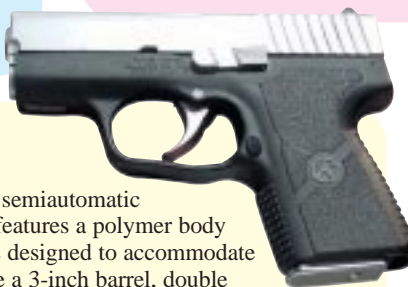
positional for comfortable eye relief and they can be removed for cleaning in the field. Both focus and user-set diopter compensation are maintained when changing between magnifications. Soft-touch rubber armoring surrounds the all-metal housing for additional protection and sure handling. The field of view for 8X is 363 feet at 1,000 yards and 268 feet for 12X. Contact Leica, 156 Ludlow Ave., Northvale, N.J. 07647, telephone: [201] 767-7500, FAX: [201] 767-8666, Website: www.leica-camera.com/sportoptics

## New MP9 Polymer

From Kahr Arms

Kahr Arms has expanded its line of compact semiautomatic pistols to include the new Model MP9, which features a polymer body and a stainless steel slide. The MP9 polymer is designed to accommodate +P and +P+ ammunition. Key features include a 3-inch barrel, double spring recoil system and front and rear snag-free combat bar-dot sights,

The capacity is six rounds, plus one in the chamber, with a companion magazine holding seven plus one. The suggested retail price is \$599. Contact Kahr Arms, 360 Route 303, Blauvelt, N.Y. 10913, telephone: [845] 353-7770, FAX: [845] 353-7833, e-mail: frankharris@kahr.com, Website: www.kahr.com



## "Bird's Head" Grip Vaquero

From Sturm, Ruger

The popular Vaquero single-action revolver from Sturm, Ruger & Co. is now available with a "bird's head" grip. The rounded style allows for easier cocking of the hammer and enables the revolver to roll in the hand for softer felt recoil. The traditional six shooter is chambered in .45 long Colt and is available in choice of two finishes, blue "color case" and stainless steel. Both feature smooth black Micarta grips, 3¼-inch barrels and a full-length ejector rod. Contact Sturm, Ruger & Co., 200 Ruger Rd., Prescott, Ariz. 86301-6181, telephone: [520] 541-8901, FAX: [520] 541-8850, Website: www.ruger-firearms.com

## The Outline

From SOG

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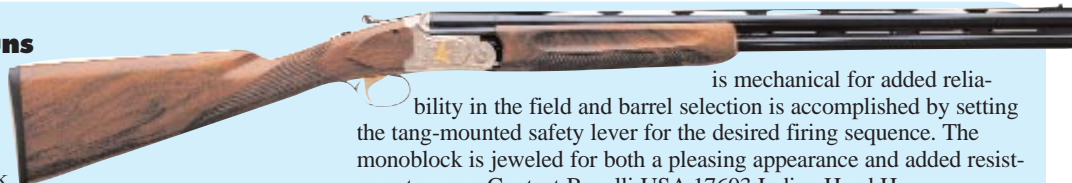
under both IBS and NBRSA regulations. Contact McMillan Fiberglass Stocks, 1638 W. Knudsen Dr., Ste. "A", Phoenix, Ariz. 85027, telephone: [623] 582-9635, FAX: [623] 581-3825, e-mail: mfsinc@indirect.com, Website: www.mcm-factory.com



## Franchi Veloce Shotguns

From Benelli USA

Benelli USA is importing a new version of the Franchi Veloce over-and-under shotgun with a straight gripped oiled English stock in 20 and 28 gauge with a 26-inch barrel. The Veloce features engraved side plates with gold embellished game scenes. The trigger



is mechanical for added reliability in the field and barrel selection is accomplished by setting the tang-mounted safety lever for the desired firing sequence. The monoblock is jeweled for both a pleasing appearance and added resistance to wear. Contact Benelli USA 17603 Indian Head Hwy., Accokeek, Md. 20607-2501, telephone: [301] 283-6981, FAX: [301] 283-6988, Website: www.benelliusa.com





## Airgun Combo Kit From RWS

The new Airgun Combo Kit is now available from RWS. The kit includes a choice of three RWS Precision air rifles, one RWS Model 350 4x32 compact scope with mount, one pellet sampler, a pair of safety glasses, paper targets and two lubri-

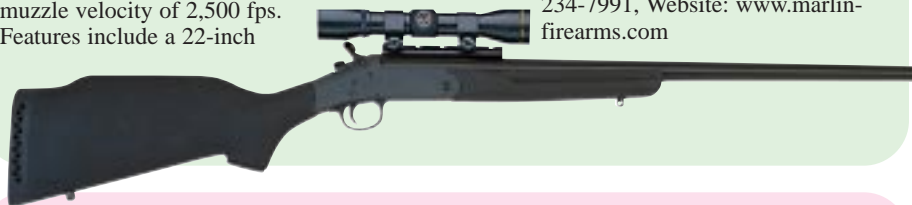
cants and assorted maintenance products. The three air rifle options are the Models 34, 40 and 94, all in .177 caliber. See your dealer, or contact Dynamit Nobel, 81 Ruckman Rd., Closter, N.J. 07624-0430, telephone: [201] 767-1995, FAX: [201] 767-1589, Website: [www.dnrws.com](http://www.dnrws.com)



## New Sportster Rifle From H&R 1871

The new Model 17 HMR Sportster from H&R 1871 is a break-open, single-shot rifle chambered for Hornady's .17 caliber rim-fire cartridge. It delivers the 17-grain V-MAX jacketed boat tail bullet with a muzzle velocity of 2,500 fps. Features include a 22-inch

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## Diamond Shotguns From ADCO

ADCO Sales is importing a new line of value-priced Diamond shotguns from Turkey. Offered are two versions, a pump action (pictured) and a semiauto. Key features include gas operation for soft recoil, smooth action, reliable

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## New Resizing Die From Innovative Tech

Innovative Technologies has designed a new resizing die especially for belted magnum cases. The new die eliminates the case bulge, allowing belted magnum cases to last up to 20 firings. The sizing die uses a collet that fits over the cartridge case, up against the belt. The case is then pressed into the sizing die, allowing the case to go

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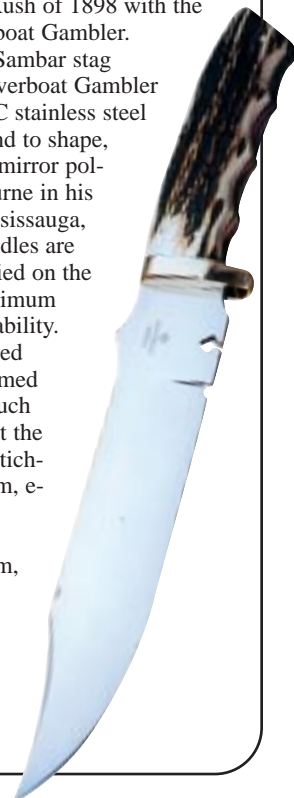
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## Riverboat Gambler Knife From George Tichbourne

Canadian master knife maker George Tichbourne salutes the historic Klondike Gold Rush of 1898 with the handsome Riverboat Gambler.

Pictured with Sambar stag handle, the Riverboat Gambler features a 440C stainless steel blade hand ground to shape, heat-treated and mirror polished by Tichbourne in his workshop in Mississauga, Ontario. The handles are pinned and epoxied on the full tang for maximum strength and reliability. Comes with a dyed leather water-formed hand-stitched pouch style sheath. Visit the Website at [www.tichbourneknives.com](http://www.tichbourneknives.com), e-mail: [sales@tichbourneknives.com](mailto:sales@tichbourneknives.com), telephone: [905] 670-02002





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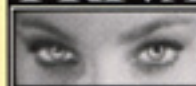
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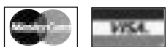
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## CAMPFIRE TALES

*continued from page 82*

with copies of everything I've ever written.

As I was going through each folder, I found a great deal of interesting reading that I had forgotten about. One such piece that immediately caught my eye was written by Col. Askins 25 years ago as he looked forward to "Handgunning In The Year 2001." That piece has been in my file since 1977 and hadn't been pulled out since that time. I find it extremely interesting, almost eerie, that I did not look at it again until the year 2001.

The Colonel was always a gutsy guy, and it takes a great deal of intestinal fortitude to prognosticate 25 years in the future. Or perhaps he figured he would be gone by now and not have to worry about standing by his predictions. Let's take a look at what he foresaw from his vantage point in 1977. And to be totally fair to him, I'll also point out whether I agreed or disagreed with him in 1977.

*I'd speculate that by 2001 there will be no calibers larger than the .45, as we've gone just about as far in that direction as anyone cares to travel!*

In 1977, Dick Casull and his .45 Magnum were just starting to be known, and I do believe I would have agreed with Col. Askins on this point. Of course, we were both wrong. We've now seen the advent of truly big-bore wildcat cartridges in both six-guns and single-shots as well as factory offerings in .475 Linebaugh, .480 Ruger and

.50 Action Express. In talking about a new .30-caliber cartridge for semiautomatics, he made this statement:

*I cannot be very optimistic about a new round of whatever caliber for any of the cylinder handguns.*

Again, I would probably have agreed with him, and again we were both wrong.

*I reckon that by 2001 the old single-action revolver will be looked upon as pretty much the curiosity.*

On this one I would have totally disagreed, but more from the standpoint of tradition and emotion. He was totally wrong on this one; however, neither one of us could have foreseen the great interest in handgun hunting or the sport of Cowboy Action Shooting that resurrected so many versions of single-action sixguns.

*The single-shot pistol, as a hunting arm, has a much brighter future.*

Bingo! He was right on with this one; however, I personally had not yet discovered the capabilities of Thompson/Center's Contender, so I probably would have disagreed with him and would have been terribly wrong.

*America is revolver country... This obsession will gradually fade away over the next quarter century. Even the cops, who present a solid front in favor of the six-shooter, are being gradually swung away.*

Again he was 100-percent right on this one.

*That the handgun of 2001 will probably be entirely of stainless steel and have measurable appeal to the average shooter.*

He was totally right on this one, and, again, I probably would have called it wrong.

*It appears to me that handguns may grow larger over the next 25 years... We will be saddled with statutes that arbitrarily set down such specifications.*

This one has turned out strangely indeed. Handguns are larger and heavier for the most part at one end of the spectrum while at the other end we see 11-ounce .357 Magnums made of Scandium. And to date we have yet to see, and hopefully never will, size specifications on handguns.

Now to be really fair to the Colonel, I should now make my predictions as to what handgunning will be at the end of the first quarter of the 21st century. Thankfully my time and space have expired and I do not have to do such a thing. The truth be known, I would have a hard time looking even one year into the future as we are at a time in history when everything is changing so rapidly. Will handgun hunting, or hunting of any kind still exist? Will we still have handguns, or firearms of any kind, or will we have become a nation of subjects instead of citizens? Only time will tell.





# Looking Back Into The Future



At one time, many, many years ago, I knew almost everything. Most teenagers do. But as I grew older and somewhat wiser, I began compiling a list of *Things I Do Not Understand*. In the ensuing years the list has become longer, not shorter. Close to the top of the list is the question of why so many shooters actually take pride in the fact that they are somehow above reading gun magazines. How do they ever learn anything? How do they ever know about new products? How do they know of the better firearms and equipment?

Perhaps my background is different than theirs. I grew up in that wonderful Happy Days time of the early 1950s. Information was not easy to come by, and newsstand gun magazines didn't exist. Then one wintry day, I traveled to town to take in a movie, stopped at the magazine rack, and my heart nearly stopped as I discovered the very first issue of *GUNS* in January 1955. My life was now complete!

Over the next few years I saw the advent of three other gun magazines. It was about the same time — 1959, still in my teen years — that I got married. This pleasant situation often changes the focus of many shooters with the lame excuse that they can't afford to purchase gun magazines. It was always understood by my wife that gun magazines were a vital part of the grocery list. That has never changed.

I also hear the excuse that there is "too much junk in gun magazines." I don't necessarily agree with that; even if I did, I would consider myself smart enough to be able to separate the "junk" from the good stuff. As one who does all the grocery shopping these days, I'm faced with being able to distinguish junk food from good food with every trip to the market. I can certainly do the same thing when it comes to reading material.

I have "read" every issue of every gun magazine published since 1955. By my count, the total number of different gun magazines is well over one dozen, and at least three of these are no longer in publication. I use the word "read" in quotations because I haven't read every single article in every single magazine, but there has never been a gun magazine printed that didn't have at least one article I learned something from. Over the years, that learning has come from such men as Elmer Keith, George Nonte, Jeff Cooper, Skeeter Skelton, Charlie Askins, Kent Bellah and Walter Rodgers, to name a few. They wrote about many things, including the advent of the Magnums, .357, .44 and .41; and the Super Magnum, .454 Casull; as well as articles on the .44 Special and the .45 Colt. I began to discover the potential of heavyweight bullets in the .45 Colt from an article written more than 30 years ago.

It has also been my habit to cut and file with a single four-drawer file cabinet full of folders containing articles, and two more filing cabinets holding every issue of several magazines. Over the years, all of this information, along with hundreds of books I have gathered, has become a most valuable resource. This past week, with the weather being wetter than I care to have for shooting activities, I found myself going through the files to do some organizing. I used up 500 clear plastic sheet protectors, holding 1,000 pages, and organized articles and columns from Elmer Keith dating all the way back to 1925, and Skeeter's writings from the 1960s, 1970s and 1980s. This information should never be lost, and these will someday go to the grandkids along

*continued on page 81*



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